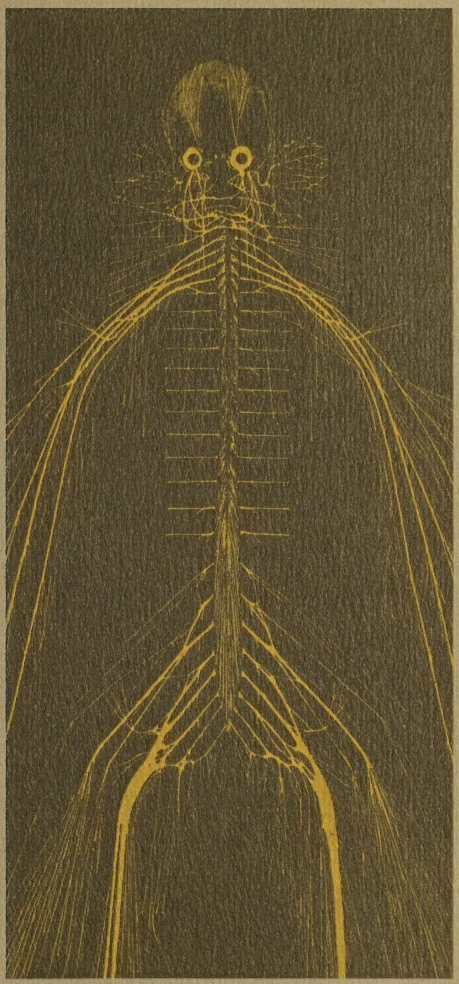
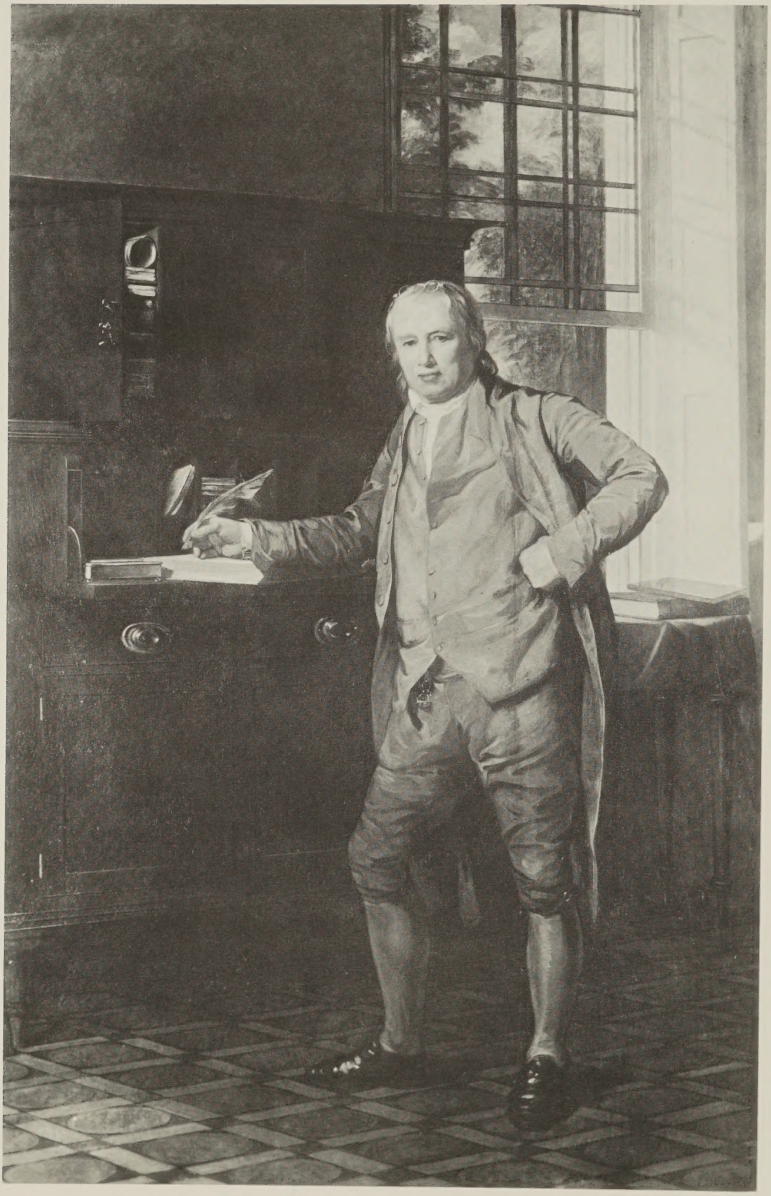
THE ART OF PHILADELPHIA

MEDICINE



PHILADELPHIA MUSEUM OF ART

THE ART OF PHILADELPHIA MEDICINE



35. Samuel Coates by Thomas Sully (American, 1783–1872)
Oil, 1812, 58 x 90. Lent by The Pennsylvania Hospital

THE ART OF PHILADELPHIA MEDICINE

PHILADELPHIA MUSEUM OF ART

SEPTEMBER 15 · DECEMBER 7, 1965

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FOREWORD

THE MEDICAL ACHIEVEMENTS realized over the years in Philadelphia are, understandably and properly, a source of great pride to the citizenry. The combined efforts of many professional people and institutions have made the city's medical fame world-wide.

Awareness of Philadelphia's medical history is particularly keen this year since 1965 is the two hundredth anniversary of the founding of the School of Medicine of the University of Pennsylvania, the first such school in the United States. Therefore, believing that visual evidence can make history far more vivid, The Philadelphia Museum of Art has decided to honor the Bicentenary and Philadelphia medicine simultaneously by presenting this exhibition, "The Art of Philadelphia Medicine."

Dr. Whitfield J. Bell, Jr. initially suggested the idea for the exhibition which was then implemented by Mr. Henri Marceau, former Director of the Museum, and by Mr. Robert L. McNeil, Jr., a vice-president of the Museum. Six pharmaceutical houses—McNeil Laboratories, Inc., Merck Sharp and Dohme, the National Drug Company, Smith Kline and French Laboratories, William H. Rorer, Inc., and Wyeth Laboratories—showed exemplary corporate imagination in making contributions to offset the expenses of the exhibition and the catalogue; this combined contribution, which made the venture possible, they considered the companies' gesture to an anniversary of such great importance as that of the founding of the School of Medicine.

Since an exhibition of such scope dealing with the subject of Philadelphia medicine has never been attempted before, the Museum has had to depend upon many scholars and medical people to find the necessary relevant material in institutions locally and abroad. The Advisory Committee has been sympathetic with our problems and has made numerous invaluable suggestions; its members were Dr. Whitfield J. Bell, Jr., Dr. Richard H. Chamberlain, Leonard C. Dill, Dr. John H. Gibbon, Jr., William Grala, T. Truxton Hare, Dr. Robert E. Jones, Dr. William F. Kellow, Dr. Glen Leymaster, Robert L. McNeil, Jr., Dr. I. S. Ravdin, Dr. Fred B. Rogers, Dr. Samuel B. Sturgis, Dr. George B. Tatum, W. Furness Thompson, David P. Willis, and Mrs. John Wintersteen. It was agreed at the outset that the past would be the emphasis of the exhibition; thus,

for an example, no portraits of the distinguished figures active in Philadelphia medicine today are included.

Dr. Bell has not only written the historical sketch and the various biographical notes printed in the catalogue, but he has also been the person who has most assisted the Museum in the realization of the exhibition. His contribution, as well as the essays of Dr. Charles Coleman Sellers and Dr. George Tatum, has made it sure that the catalogue, with its extensive illustrations, will be a permanent contribution to the literature of the visual arts in the United States, of Philadelphia history, and of American medicine.

However, the person who has correlated the vast amount of information received, has selected the material to be included in the exhibition, has handled all practical details, and has edited the catalogue is Mr. Kneeland McNulty, the Philadelphia Museum's Curator of Prints and Drawings. The amount of material here presented in a new light gives some idea of the scale of the achievement. He has been assisted ably by Mrs. Helen Corl Foley of his Department and as well by Miss Gertrude Toomey, Registrar.

In pursuing the complicated researches for the exhibition, many have assisted the Museum and thus contributed significantly to the knowledge of the subject being studied. Their names are listed elsewhere but we particularly thank them.

Mr. P. J. Conkwright of the Princeton University Press has been notably generous in contributing his services in planning the handsome design and layout of the catalogue.

The quality of an exhibition such as this depends upon the lenders. We have been delighted by the almost universally sympathetic reception our requests have received, particularly given the length of time that the exhibition is to run. We here express our great appreciation to each of the lenders even as we realize that each of them has joined the Museum in wishing to honor the School of Medicine and medical education in the United States on such an august anniversary.

EVAN H. TURNER, *Director*

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by Evan H. Turner, Director

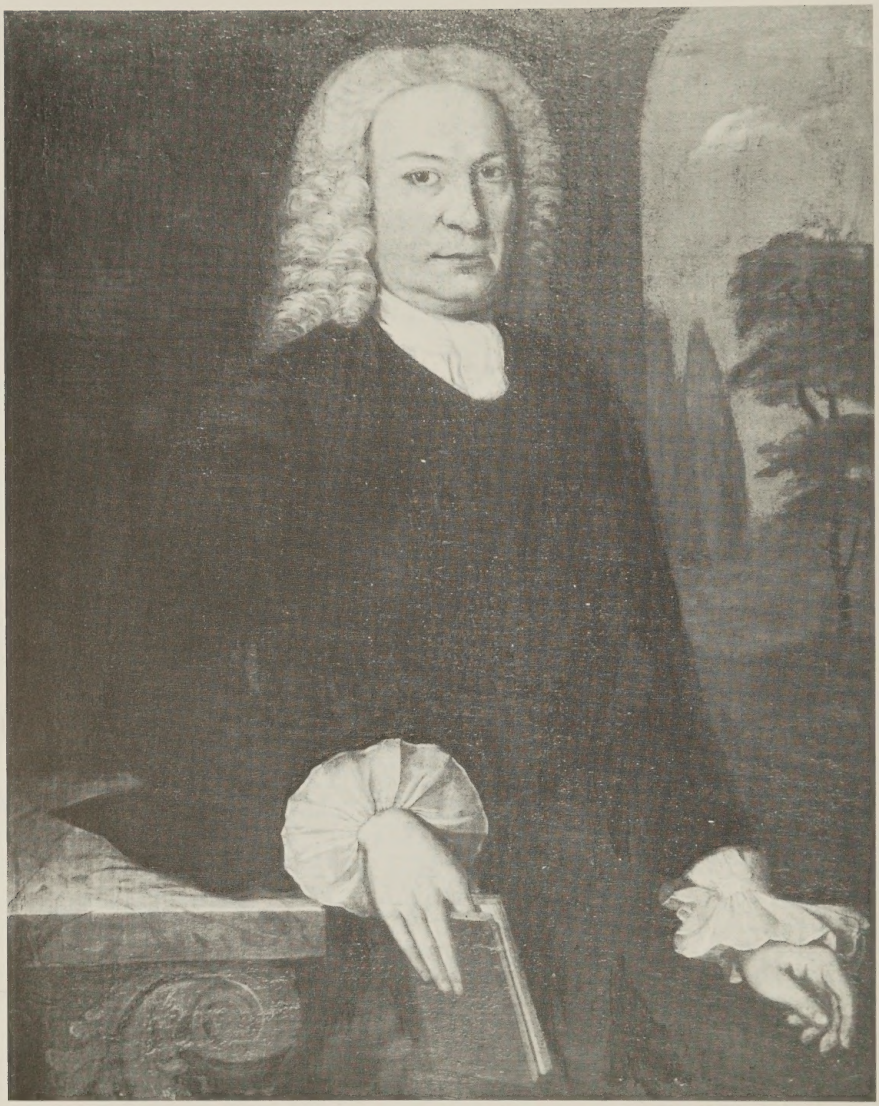
The Art of Philadelphia Medicine
by Whitfield J. Bell, Jr.

Conventions of Medical Portraiture
by Charles Coleman Sellers

Architecture and Medicine in Philadelphia
by George B. Tatum

The Museum is most grateful for the assistance of the following individuals and institutions:

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1. Thomas Graeme by unknown (American, 18th c.)
Oil, 42 x 31¾. Lent by Douglas C. Turnbull, Jr.

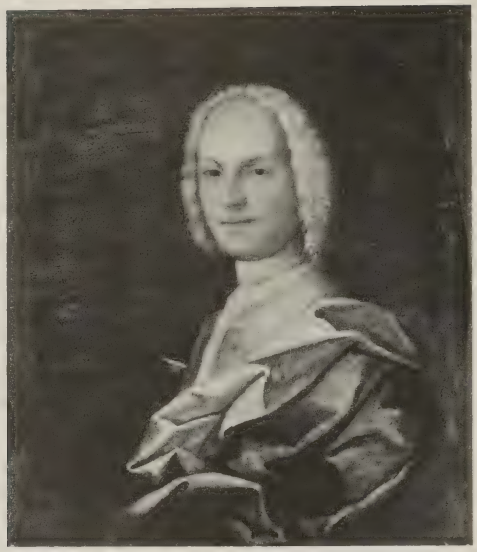
THE ART OF PHILADELPHIA

MEDICINE

OF the first medical practitioners in Pennsylvania hardly more is known than their names. One Jan Petersen was a salaried surgeon of the Dutch West India Company on South River (the Delaware) in 1638; and Jan Oosting and Wilhelm van Rasenberg are mentioned some twenty years later. With the coming of William Penn other names appear in the records—Thomas Wynne, Edward Jones, Thomas Lloyd, and "tender Griffith Jones, who both sees and feels"—but if we know more about these Welsh Quakers than about their Dutch and Swedish predecessors, it is principally because they held important public offices; some, in fact, practiced medicine hardly at all. Perhaps there was little call for their services if one is to credit the promotional literature of the time with its praise of the salubrity of the climate: Gabriel Thomas, in an account of the colony in 1698, for example, said nothing of lawyers and physicians in his remarks on trades and professions because, he explained, "this country is very peaceable and healthy."

THOMAS GRAEME (1688–1772). Born at Balgowan, Perthshire, Scotland; member of the Governor's Council, 1726; judge of the Supreme Court, 1731; Collector of Customs at Lewes, 1742; an original member of the American Philosophical Society, 1743; first president, St. Andrew's Society of Philadelphia, 1749; physician to the Pennsylvania Hospital, 1751. His eulogist said: "He was blest with a clear head, a masculine understanding, and a happy sagacity, which justly placed him for half a century at the head of his profession, as a physician, in this city. His practice was fair and honorable, distinguished as well by his medical abilities and communicative temper as by a natural philanthropy, that led him equally to the most affectionate and diligent attendance on all his patients, and to the charitable relief of the numerous poor who applied to him."

Lloyd Zachary (1701–1756). Born in Boston; studied under Dr. John Kearsley, Sr., of Philadelphia, and in Europe; Health Officer, Port of Philadelphia, 1729; physician to the Pennsylvania Hospital, 1751, to which he bequeathed £350 and his medical books.



2. Lloyd Zachary
by Gustavus Hesselius (American, 1682–1755)
Oil, ca. 1754, 29 x 24
Lent by The Pennsylvania Hospital

By 1730, however, when Philadelphia had above 10,000 inhabitants, lawyers and doctors each formed a numerous, recognizable, and prosperous guild. Most medical care was provided, as in England, by apothecaries; that is, by men who, having had some instruction in medicine, combined care of the sick and simple surgery with the sale of drugs in their shops. The elder William Shippen, whose shop was at the Sign of Paracelsus' Head, was one of these; as his experience and skill increased, his patients became more numerous, and, giving up the trade of a drug-seller, he rose to the rank of a physician. But, in addition to the apothecaries, there were in Philadelphia a few physicians who had had more regular medical training, usually abroad. Lloyd Zachary [2]* and Thomas Cadwalader were such persons; so were Thomas and Phineas Bond [3]. After completing an

Phineas Bond (1717–1773). Born in Calvert County, Md.; studied medicine in London and Leyden; M.D., University of Rheims, 1742; director, Library Company of Philadelphia, 1740; member of the first board of trustees, College of Philadelphia, 1751; physician to the Pennsylvania Hospital, 1751; one of the founding members of the American Philosophical Society, in which he was designated "General Natural Philosopher," 1743. He is said to have been "remarkable for conviviality, but never habituated to intemperance," and was a member of a club which met nightly at the Tun Tavern: a guest reported that the talk one night was on the English poets and some foreign writers, particularly Cervantes, "whom we loaded with elogiums due to his character."

This painting was most likely done in 1750 during Feke's third visit to Philadelphia, where, in 1746, he had painted Miss Williamina Moore, whom Bond married in 1748.

* Figures set within brackets [] refer to catalogue numbers.



3. Phineas Bond by Robert Feke (American, 1705/10–after 1750)
Oil, 1750, 39¼ x 32. Philadelphia Museum of Art: Given by Phyllis Cochrane Denby



4. Thomas Cadwalader by Charles Willson Peale (American, 1741–1827)
Oil, ca. 1772, 51 x 41. Lent by Capt. John Cadwalader, USN (Ret.)

John Bard (1716–1799). Born in Burlington, N. J.; apprenticed to Dr. John Kearsley, Sr., of Philadelphia; settled in New York, 1746; Health Officer, New York, 1759; first president, Medical Society of New York, 1788. He was an associate of Benjamin Franklin, who recommended him to Cadwalader Colden as "an ingenious physician and surgeon, and a discreet, worthy and honest man." He was the father of Samuel Bard, who was a fellow-student of John Morgan at Edinburgh and one of the founders of the medical department of King's College, New York.



5. John Bard
by James Sharples, Sr., attrib. (English, ca. 1751–1811)
Pastel, ca. 1795–99, 9 x 7
Lent by Independence National Historical Park

apprenticeship to an older physician at home, they had gone to Britain or the Continent, spent a winter at a hospital in London and a year or two attending formal lectures, and come home with a degree from Leyden or Rheims.

With such training, a young man who was intelligent, industrious, and attractive might go far in his profession. Patients and the sale of drugs would provide a steady, and steadily increasing, income, which might be augmented by the fees apprentices paid. Thomas Cadwalader [4] achieved success in these terms. He taught apprentices, one of whom was John Bard [5], who, after several years' practice in Philadelphia, settled in New York. Cadwalader lectured on

Thomas Cadwalader (1707–1779). Born in Philadelphia; studied in London and at Rheims; conducted anatomical dissections and demonstrations in Philadelphia, 1731; burgess of Trenton, N. J.; a founder of the Library Company of Philadelphia, 1731, and of the Pennsylvania Hospital, 1751; trustee of the Academy of Philadelphia, 1751; member, Provincial Council of Pennsylvania, 1755; author, *An Essay on the West-India Dry Gripes*, 1745. He owed his life to his good nature: a British officer, weary of life, determined to shoot the first person he met and then surrender himself to be hanged. Cadwalader was the first man he encountered, but the doctor bowed politely and inquired, "Good morning, sir. What sport?" The would-be suicide walked on and killed another, explaining he could not shoot so civil and agreeable a gentleman as Cadwalader.

anatomy and in 1745 he published his *Essay on the West-India Dry Gripes* (lead poisoning), which Franklin printed.

The progress of medicine until the middle of the eighteenth century thus depended on the efforts of individuals. The profession lacked an institutional focus; there was not even a medical society or, so far as is known, an informal medical club in the town. A focus was provided at last in 1751 when the Pennsylvania Hospital was created by the cooperative efforts of medical men like Thomas Bond, who first proposed a plan for a hospital, and public-spirited laymen like Benjamin Franklin, who made the plan work. Designed to provide care for the insane and for sick strangers, including seamen, the Hospital soon became a center for teaching and practice, for the members of the staff were privileged to take their apprentices into the wards. John Adams, who found little to praise in Philadelphia—he considered Bostonians superior in morals, manners, religion, education, even in physical appearance—made an exception for the town's charitable public foundations, of which the Hospital was the chief.

With the restoration of peace after the fall of Fort DuQuesne and Quebec in 1759, there was a noticeable surge in medical affairs. The growing prestige of the profession, the opportunities the Hospital afforded for observation and study, the example of the British army surgeons all encouraged young Americans not only to enter medicine, but to get the best available preparation for practice. In addition, there was now sufficient wealth in America to support the students in their enterprise. Chief Justice William Allen [7], who had provided funds for Benjamin West to study painting in Rome, "lest such a genius be cramped for want of a little cash," paid part of the cost of the education of several young physicians.

The pattern of study which Judge Allen's protegés and others followed was well-defined. Benjamin Franklin [8] and Dr. John Fothergill [9], the eminent Quaker practitioner, to whom they bore letters of introduction in London, found them lodgings, lent them money, sponsored them in the learned world, and gave them advice of all sorts. On medical matters Franklin usually advised them to see Fothergill, and Fothergill recommended that they spend a winter attending private lectures in London, often Dr. William Hunter's [10], and walking the wards, usually at St. Thomas's; and then go to Edinburgh for a course or two of formal lectures under Professors Cullen [12] and Monro [13].

A few American students varied this common pattern. John Morgan, for example, spent a winter at Paris, where he attended the lectures of the great anatomist Jean-Joseph Sue [14], for whose book, *Anthropotomie*, he provided data;

John Redman (1722–1808). Born in Philadelphia; M.D., University of Leyden, 1748; physician to the Pennsylvania Hospital, 1752; first president, College of Physicians of Philadelphia, 1787; trustee, College of Philadelphia, 1751; trustee, College of New Jersey (Princeton), 1761; elder, Second Presbyterian Church, Philadelphia. Benjamin Rush spoke for Redman's many apprentices when he wrote: "I have experienced kindness from Dr. Redman I had little reason to expect. I have ever found in him not only the indulgent master, but the sincere friend and tender father."



6. John Redman
by unknown (American?, 18th c.)
Oil, 35¼ x 28¼
Lent by The College of Physicians of Philadelphia



7. William Allen
by Benjamin West (American, 1738–1820)
Oil, ca. 1760, 42⅝ x 32¾
Lent by Independence National Historical Park

William Allen (1704–1780). Born in Philadelphia; entered at the Middle Temple, London, 1720; pensioner, Clare College, Cambridge, 1725; member, Philadelphia City Council, 1727; member, Pennsylvania Assembly, 1731; mayor of Philadelphia, 1735; chief justice of Pennsylvania, 1750. He was a wealthy merchant, a wise philanthropist, and a generous patron of artists and the arts. He advanced money for the erection of the Pennsylvania State House ("Independence Hall"); he was a trustee of the College of Philadelphia and a manager of the Pennsylvania Hospital, contributing heavily to each. He advanced funds for medical study abroad to John Redman, Ralph Assheton, and John Morgan. He had a notable collection of art, which Morgan took the painter Henry Pelham to see. Allen gave Charles Willson Peale a warm recommendation to Benjamin West (who said it was the best that could have been brought him), and West gratefully described Allen as "the principal of my patrons."



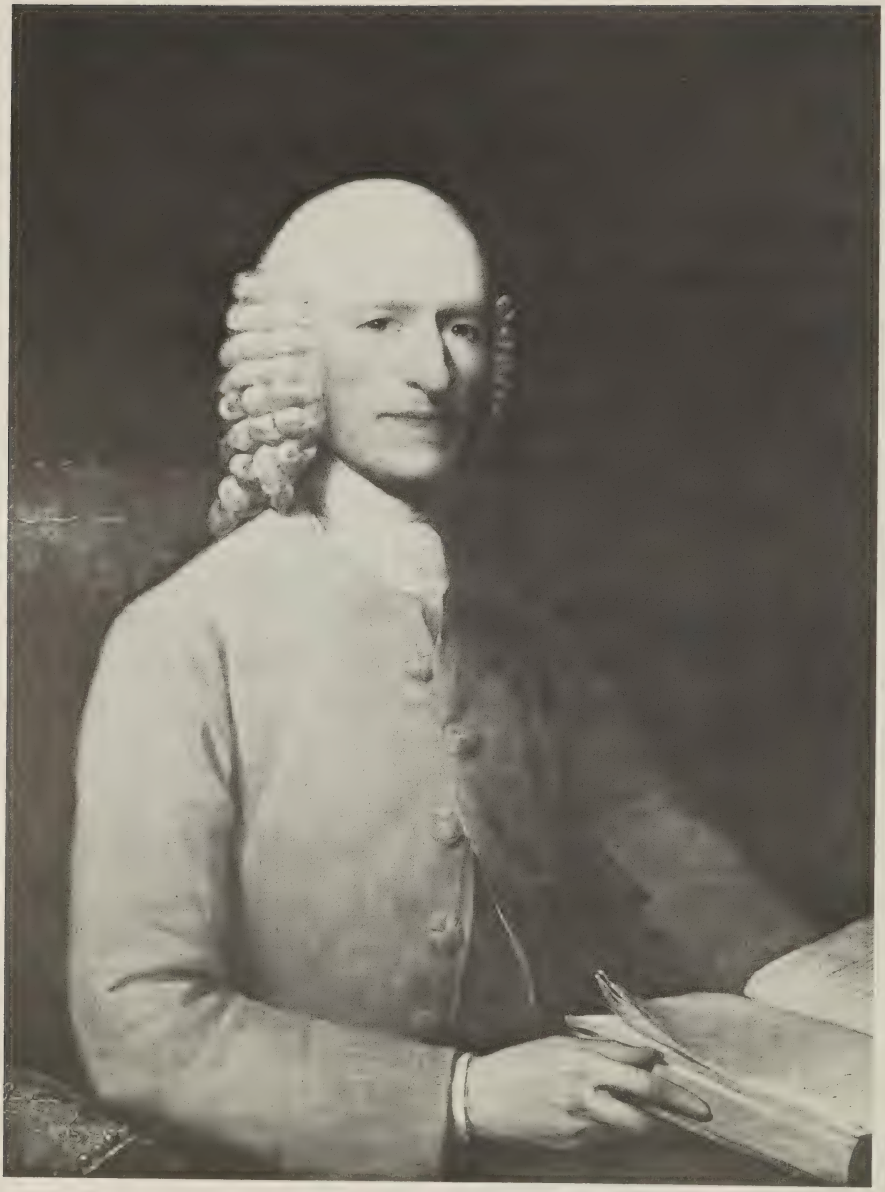
8. Benjamin Franklin by Mason Chamberlin (English, active 1760–1787)
Oil, 1762, 49 x 39. Lent by Mr. and Mrs. Wharton Sinkler

while Adam Kuhn studied botany with Linnaeus [15] at Upsala, forming a friendship which was maintained by correspondence until the Revolution. Not until after the war did anyone study in Germany, and not until the middle of the nineteenth century did great numbers of American medical students go there or to Vienna.

There was, of course, more to a European education than the degree; and most of the Americans used their opportunities to see something of the world. Few saw as much of it as John Morgan. In Edinburgh he was often the guest of Sir Alexander Dick [16] of Prestonfield and of the Lord Provost George Drummond [17] at Drummond Lodge; and before he left Scotland friends had him made a freeman of both Edinburgh and Stirling. He traveled through Holland with James Boswell, whose "spirited and agreeable conversation" he enjoyed more than that of anyone he met on the trip. In Italy he traveled in the party of the Duke of York, and had a private audience with the Pope, who was "affable and courteous." Returning through Switzerland, he called on Voltaire, who at the end of the visit sent him off with a characteristic injunction: "Love truth and search diligently after it; hate hypocrisy . . . and above all hate the priests." Morgan [18, 19] acquired academic honors everywhere: he came home a Fellow of the Royal Society of London, a Fellow of the Royal College of Physicians of Edinburgh, a licentiate of the Royal College of Physicians of London, a correspondent of the Académie Royale de Chirurgie of Paris, and a member of the Arcadian Society of Rome.

Benjamin Franklin (1706–1790). A friend of physicians, a publicist of medical information, an inveterate amateur diagnostician, throughout a long life Franklin was interested in and often concerned with health, disease, and medicine. He wrote informedly about the common cold. He was tireless in recommending fresh air, exercise, and temperance as guides to health. He invented a catheter for his brother's use. James Logan of Philadelphia, Governor Jonathan Belcher of New Jersey, Sir Humphrey Senhouse and others called in Franklin and his electrostatic machine to cure them of paralysis, deafness, or insanity. He helped found a hospital. Understandably and appropriately he was made an honorary member of several medical societies; mistakenly but understandably a French engraver about 1780 identified him as "Docteur en medicine."

Not least of Franklin's services to medicine was as adviser and sponsor to a whole generation of Americans abroad. William Shippen, Jr., Thomas Parke, and George Logan were only a few of those he helped; and many returned their thanks, as Benjamin Rush and Caspar Wistar did, by dedicating their theses to him. He acted often from motives of friendship for the lads' parents, but always, as he told Dr. William Cullen when introducing John Morgan, for the sake of "my country," where, he was persuaded, the young men would prove to be "not a little useful."



9. John Fothergill by Gilbert Stuart (American, 1755–1828)
Oil, ca. 1781, 36 x 27¾. Lent by The Pennsylvania Academy of the Fine Arts

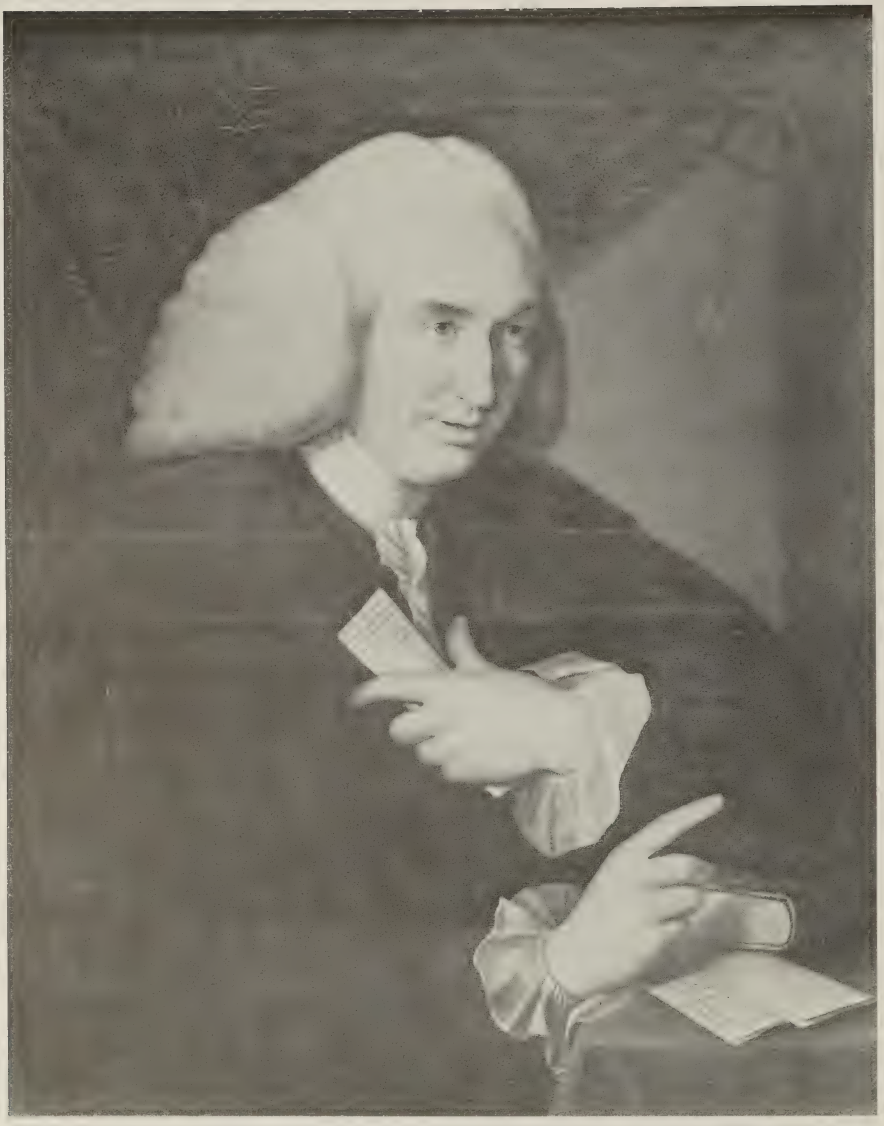
William Hunter (1718–1783). Born at Long Calderwood, East Kilbride, Lanark, Scotland; studied at Glasgow and Edinburgh Universities and at London; M.D., Glasgow, 1750; physician extraordinary to Queen Charlotte, 1764; professor of anatomy, Royal Academy, 1768; president, Medical Society of London, 1781; author, *The Anatomy of the Human Gravid Uterus*, 1774. He was the most famous and successful of all the private lecturers on medicine in London in his day. Of his museum in Great Windmill Street Thomas Parke of Philadelphia wrote: "A more complete collection of preparations I think is not in Europe. Nay, every part of the human body is there to be seen in its greatest beauty. Instead of an old dirty theater I there beheld the most elegant building suitable for the purpose. In short it . . . far surpasses anything of the kind I ever saw before. . . ." William Shippen, Jr., John Morgan, and Benjamin Rush were among Hunter's students from America, and Morgan adopted for his own his teacher's cheering cry, "Go on, and prosper!" Hunter "never married; he had no country house; he looks, in his portraits, a fastidious, fine gentleman; but he worked till he dropped and he lectured when he was dying."



10. William Hunter
by Allan Ramsay (Scottish, 1713–1784)
Oil, 1758–60, 37¾ x 29½
Lent by The University of Glasgow, Hunterian Collection

John Fothergill (1712–1780). Born at Carr End, Yorkshire, England; M.D., Edinburgh University, 1736; licentiate, Royal College of Physicians, London, 1744 (the first Edinburgh graduate so admitted). He explained his financial success as a practitioner by saying that he had "climbed over the backs of the poor into the pockets of the rich." His botanical collection was outstanding. His philanthropies were many and varied. As a Quaker he took a special interest in Penn's "Holy Experiment" in America, counseled the Pennsylvania Friends, encouraged and supported Pennsylvania institutions, and, in the last months before the break between Great Britain and the Colonies, cooperated with Franklin in drafting a proposal for reconciliation. "His subjects of conversation were always philanthropic," Benjamin Rush wrote, "and his manner in discussing them was animated, but methodical. He often spoke with horror of war, and lamented the prevailing custom of the English and French nations considering each other as 'natural enemies.' With the strictest conformity to the phraseology and manners of the people called Quakers, he was a perfectly bred gentleman."

Stuart painted this portrait at the request of his friend and Fothergill's relation, Benjamin Waterhouse, then a student of medicine in London. It was exhibited in the Royal Academy in 1781. One commentator on the show spoke kindly of it: "Mankind are much obliged to this artist, who has paid the debt of gratitude to the memory of Dr. Fothergill. He who has rescued so many from the grave is now restored to life by an admirable pencil. Death, which generally terminates all friendly recollection, has not prevented Mr. Stuart from doing what Dr. Fothergill would not permit when he was alive."



12. William Cullen by William Cochran (Scottish, 1738–1785)
Oil, ca. 1768, 32½ x 27¼. Lent by The Scottish National Portrait Gallery, Edinburgh



11. Percivall Pott
by Sir Joshua Reynolds (English, 1723–1792)
Oil, 1784, 56 x 45¼
Lent by Board of Governors, Royal Hospital of St. Bartholomew, London

Percivall Pott (1714–1788). Born in London; apprenticed to Edward Nourse, surgeon, 1729; admitted to the Company of Barber-Surgeons, 1736; surgeon to St. Bartholomew's Hospital, 1749; Fellow of the Royal Society, 1765; author, *Observations on the Nature and Consequences of those Injuries to which the Head is liable from External Violence*, 1768 ("one of the classical writings of English surgery"—Sir D'Arcy Power), and *Some few Remarks upon Fractures and Dislocations*, 1768 ("on the whole . . . the most important contribution by Pott to the surgical practice of the [eighteenth] century"—Power). By his integrity and manners he did much to raise the position of surgeons in England. He was the teacher of John Hunter and one of Dr. Samuel Johnson's physicians. William Shippen, Jr., who saw an operation by him, thought it the "neatest" he had ever witnessed, and "Mr. Pott a very clever neat surgeon."

Morgan collected art as well as diplomas. He bought a number of prints and drawings and some paintings. He and his traveling companion Samuel Powel of Philadelphia were painted at Rome by Angelica Kauffmann. Between the young doctor and the young painter a friendship sprang up. When Angelica fell ill, Morgan prescribed for her. When he refused a fee, Angelica offered him a copy of any painting in her studio. Gallantly he chose a portrait of herself. It

William Cullen (1710–1790). Born in Hamilton, Lanark, Scotland; M.D., University of Glasgow, 1740; professor of medicine, Glasgow, 1751; professor of chemistry, Edinburgh University, 1756; clinical lecturer, 1757; professor of the theory of physic, 1766; president, Royal College of Physicians, Edinburgh, 1773; author, *First Lines of the Practice of Physic*, 1776. "It must certainly make him very happy," one of his students wrote in 1764, "to see so many even from the wilds of America crowding his lectures, and listening to him with the greatest pleasure and attention . . . and so universal a silence reigns that was a pin to drop it would be distinctly heard."

Not illustrated 14. JEAN-JOSEPH SUE by Guillaume Voirot (French, 1713–1799). Oil, 1789, 50 x 37½. Lent by Musée de Versailles et des Trianons au Château Versailles.

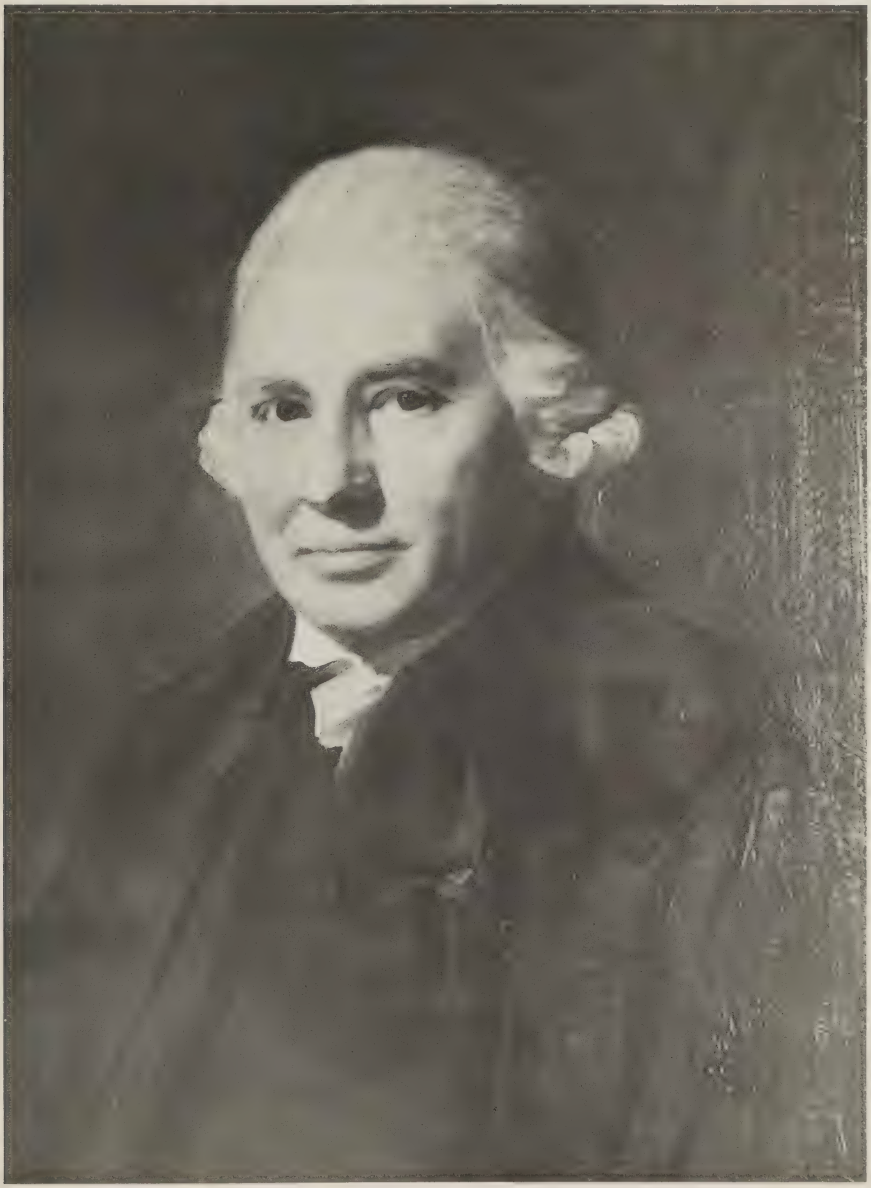
JEAN-JOSEPH SUE (1710–1792). Born at LaColle, Alpes Maritimes, France; professor of anatomy, Collège de Chirurgie, Paris, 1759; chief surgeon, Hôpital de la Charité, 1761; professor of anatomy, Académie de Peinture et de Sculpture, Paris. John Morgan attended his lectures in 1763–64, and exchanged with him hints about preparing anatomical specimens. The amphitheater of the school of surgery when Sue lectured there was, in the words of his nephew, "a kind of palace where he spread out all the wealth of his anatomical labors."

hung for many years in Morgan's house in Philadelphia, then it was given to Powel, and Powel's widow presented it to the Pennsylvania Academy of the Fine Arts, where it still is.

The most important result of these European studies and travels was the resolution the Americans took, as they walked and talked together in London and Edinburgh, to reform medical practice and education in America. They discussed their plans with Dr. Fothergill, who offered cautious encouragement. The first of the group to return home was William Shippen, Jr. [20] According to the plan he opened a course of lectures on anatomy and midwifery in the fall of 1762, delivering the introductory lecture at the State House in Philadelphia. Fothergill promoted the scheme by presenting to the Hospital a set of eighteen magnificent anatomical drawings by Jan van Rymsdyck [21a, b], illustrator for Dr. William Hunter, as well as a skeleton and several large plaster casts of the gravid uterus. Fothergill also presented a copy of William Lewis' *Materia Medica*, which stimulated the extension of the library in the Hospital. Shippen used the Rymsdyck drawings in his regular lectures and they were invariably shown to visitors as an outstanding feature of the city's cultural life.

In Edinburgh, meanwhile, John Morgan, who expected soon to join Shippen

ALEXANDER MONRO *secundus* (1733–1817). Born in Edinburgh; M.D., Edinburgh University, 1755; professor of anatomy and surgery, as adjunct to his father, 1755; studied in London, Paris, Leyden, and Berlin; Fellow of the Royal College of Physicians, Edinburgh; author, *Observations on the Structure and Functions of the Nervous System*, 1783, which described the foramen of Monro, and *The Structure and Physiology of Fishes*, 1785. During his long professorship he is said to have lectured to 40,000 students, but the number is exaggerated. One of the Philadelphians who took his course, Thomas Parke, judged him the best lecturer in the medical school, but ranked him only "the third Professor for Erudition"!



13. Alexander Monro (*secundus*) by Sir Henry Raeburn (Scottish, 1756–1823)
Oil, ca. 1785, 30 x 26. Lent by Lt. Col. A. G. F. Monro, Scotland



15. Carl Linnaeus
by Robert Dunkarton (English, 1744–ca. 1817) after Martin Hoffmann, from Thornton's *Temple of Flora*, London, 1805
Mezzotint, 1805, 20 x 14
Smith Kline and French Laboratories Collection

Carl Linnaeus (1707–1778). Educated at the universities of Lund and Upsala; lecturer in botany, Upsala, 1730; made a scientific journey of 4600 miles through Lapland (in the accompanying print he wears his Lapland dress), 1732; M.D., University of Hardewijk, 1735; practiced medicine in Stockholm, 1738; professor of medicine, Upsala, 1741; professor of botany, 1742. His *Systema Naturae*, 1735, and *Genera Plantarum*, 1737 (the latter called "the starting-point of modern systematic botany") established an orderly, if artificial, system of classifying the mounting flood of botanical specimens which poured into European cabinets and gardens from America, Africa, and Asia in the eighteenth century.

Among Linnaeus' students, who came to Upsala from all over the world, was Adam Kuhn of Lancaster County, Pa. To Kuhn's father Linnaeus wrote of the lad: "At this academy he can learn the history and diagnosis of diseases, materia medica, and natural history, better and more thoroughly than perhaps in any other place. And if I should live for three years more, he will be a Doctor of Medicine, not only in name, but also in knowledge." Kuhn took his degree at Edinburgh, not Upsala; but he became the first professor of materia medica and botany in the College of Philadelphia, 1768.

in Philadelphia, began to enlarge their plan for medical lectures. Enlisting the support of the Proprietor Thomas Penn and of several trustees of the College of Philadelphia who were then in London, he drafted a program for a medical school to be attached to the College. He even talked to several fellow-students about the posts each might have in the new institution. Within a few days of

Sir Alexander Dick, baronet (1703–1785). Born at "Prestonfield," near Edinburgh; M.D., University of Leyden, 1725; M.D., St. Andrew's University, 1727; Fellow, Royal College of Physicians of Edinburgh, 1727; president, 1756; traveled on the Continent with Allan Ramsay, 1737; promoted the cultivation of rhubarb, for which he received a gold medal of the Society of Arts. He was Franklin's host in Edinburgh, 1759; James Boswell considered writing his life before settling to Johnson's; and Dr. Johnson himself declared that Dick was "the only Scotsman liberal enough not to be angry that I could not find trees, where trees were not."



16. Sir Alexander Dick by Allan Ramsay (Scottish, 1713–1784)
Oil, 30½ x 25. Lent by The Royal College of Physicians of Edinburgh



17. George Drummond by John Alexander (Scottish, active 1715–1752)
Oil, 1752, 50 x 40. Lent by The Royal Infirmary of Edinburgh and Associated Hospitals

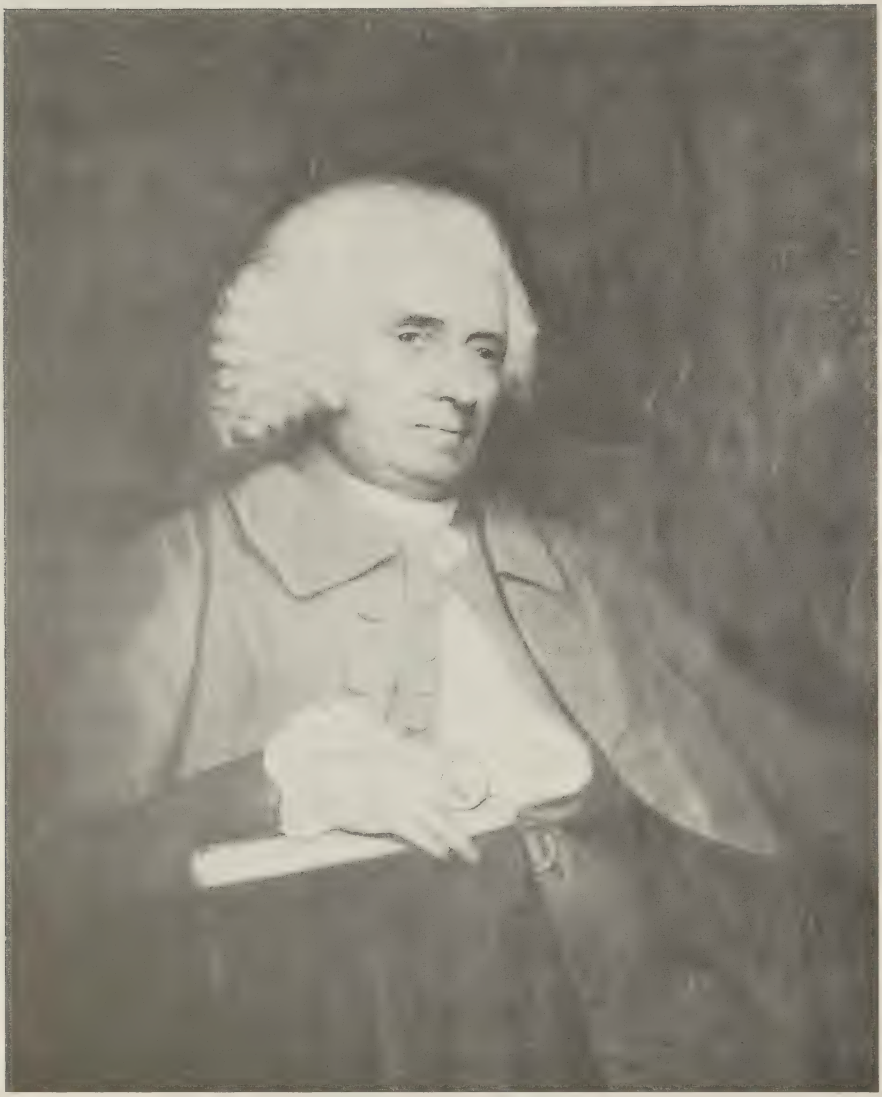
John Morgan (1735–1789). Born in Philadelphia; A.B., College of Philadelphia, 1757; M.D., Edinburgh University, 1763; Fellow of the Royal Society and of the Royal College of Physicians, Edinburgh; professor of the theory and practice of medicine, College of Philadelphia, 1765; director-general of the Hospital, Continental Army, 1775. In his account of Morgan, his student, colleague, and friend, Benjamin Rush justly said: "The historian, who shall hereafter relate the progress of medical science in America, will be deficient in candor and justice, if he does not connect the name of Dr. Morgan with that auspicious era in which medicine was first taught and studied as a science in this country."



18. John Morgan
by Angelica Kauffmann (Swiss, 1741–1807)
Oil, 1764, 53 x 38¾
Lent by The Washington County Historical Society.
Photograph courtesy of Frick Art Reference Library

returning to Philadelphia, Morgan was elected on May 3, 1765, professor of the theory and practice of medicine in the College—the first medical professorship in British North America—and on May 30 he read his *Discourse upon the Institution of Medical Schools in America*, and so inaugurated a new epoch in the history of medicine in the American colonies no less than in Philadelphia.

George Drummond (1687–1766). Appointed accountant-general of excise for Scotland in 1707, he rose through the Edinburgh *cursus honorum* to become Lord Provost of the city in 1725. As a public servant, town-planner, and philanthropist, he changed the face of Edinburgh, renovating the Old Town and projecting the New. He supported and strengthened the University and its medical faculty, and laid the foundation, figuratively as well as literally, of the Royal Infirmary (seen through the window in this portrait), whose regulations were a model for the Pennsylvania Hospital. As Lord Provost for the fifth time, Drummond admitted Benjamin Franklin to the freedom of Edinburgh, 1759; during his sixth and last term, 1763, he conferred the same honor on John Morgan, whom he befriended in the Scottish capital and who called him affectionately in return "the good old Cato."



19. John Morgan by Thomas Spence Duché (American, 1763–1790)
Oil, ca. 1780(?), 35¾ x 27¾. Lent by The Historical Society of Pennsylvania. Photograph courtesy of Frick Art Reference Library

William Shippen, Jr. (1736–1808). Born in Philadelphia; A.B., College of New Jersey (Princeton), 1754; M.D., Edinburgh University, 1761; lecturer on anatomy, Philadelphia, 1762, in which capacity he used the van Rymsdyck drawings in the Pennsylvania Hospital; professor of anatomy and surgery, College of Philadelphia, 1765; director-general of the Hospital, Continental Army, 1777; physician to the Pennsylvania Hospital, 1778; president, College of Physicians of Philadelphia, 1805. Charles Caldwell, one of his students, described him: "Dr. Shippen . . . in stature and figure, countenance, and general appearance, and style of manners, was one of the most elegant and gentlemanly personages of the time; and . . . possessed of an excellent and well-cultivated mind, . . . was a polished, and, when excited, an *impressive*, if not an *eloquent* public *speaker;* yet he was far from being accomplished in the art of *reading*." Even Benjamin Rush, who considered Shippen lazy and self-indulgent, admitted that as a professor he was "eloquent, luminous, and pleasing."



20. William Shippen, Jr.
by Gilbert Stuart (American, 1755–1828)
Oil, ca. 1798, 29 x 24
Lent by Edward Shippen. Photograph courtesy of Frick Art Reference Library.

THE MEDICAL SCHOOL OPENED in the fall of 1765. The success of the institution was instantaneous: in 1767 rules for the awarding of degrees were adopted; in 1768 Adam Kuhn, who had studied botany with the great Linnaeus and been graduated in medicine at Edinburgh, was added to the faculty, and the first class was graduated. These ten hopeful young men were the first medical graduates in British North America, and the trustees of the College properly and proudly hailed the occasion as "the Birthday of Medical Honors in America." With the appointment of Benjamin Rush to the chair of chemistry in 1769 the faculty was completed as it remained until the Revolution.

The Philadelphia professors patterned their courses closely on those of Edinburgh—so closely, in fact, that some of them merely read the notes they had taken of their professors' lectures abroad. But there were significant differences between the two schools. In the first place, every candidate for a degree in Philadelphia was required to attend Bond's clinical lectures at the Hospital; and in the second, the degree was that of bachelor of medicine—students wishing an M.D. had to practice for three years, write an acceptable thesis, and pass an examination. Some of the Edinburgh professors expressed the flattering view that Philadel-



21a. Anatomical Drawing of Erect Male Figure, Posterior View
by Jan van Rymsdyck (Dutch, active 1760–1780)
Pastel drawing, 25½ x 17½
Lent by The Pennsylvania Hospital



21b. Anatomical Drawing of Erect Male Figure, Anterior View
by Jan van Rymsdyck (Dutch, active 1760–1780)
Pastel drawing, 25½ x 17½
Lent by The Pennsylvania Hospital

Jan van Rymsdyck (active 1760–1780). Born in Holland; lived in Bristol, England, 1760–70; made anatomical drawings for Dr. William Hunter; with his son Andreas published a collection of illustrations of the natural history collections of the British Museum, 1778.

These drawings come from a group of eighteen presented to the Pennsylvania Hospital in 1762 by Dr. John Fothergill. "I need not tell thee," he explained to one of the Hospital Managers, "that the knowledge of anatomy is of exceeding great use to practitioners in physick & surgery & [that] the means of procuring subjects with you are not easy; some pretty accurate anatomical drawings about half as big as the life have fallen into my hands which I purpose to send to your Hospital to be under the care of the physicians & to be by some of them explained to the students or pupils who may attend the Hospital. In the want of real subjects these will have their use. . . ."

John Adams described the drawings in 1774. While attending the Continental Congress in Philadelphia, he visited the Hospital, where "Dr. Shippen . . . showed us a series of anatomical paintings of exquisite art. Here was a great variety of views of the human body, whole, and in parts. The Doctor entertained us with a very clear, concise and comprehensive lecture upon all the parts of the human frame. This entertainment charmed me. He first showed us a set of paintings of bodies entire and alive—then of others with the skin taken off, then with the first coat of muscles taken off, then with the second, then with all—the bare bones. Then he showed us paintings of the insides of a man, seen before, all the muscles of the belly being taken off—the heart, lungs, stomach, gutts."



21c. Nude Male Figure With Adult and Fetal Skeletons
by Burgess (English ?, active 1760)
Water color, 25½ x 17½
Lent by The Pennsylvania Hospital

phia would rival the Scottish university, and Professor Cullen assured American friends that the Philadelphia school would be the surest means of perpetuating his name to posterity, "for I believe that this School will one day or other be the greatest in the world."

In this happy prospect there was one flaw—the rivalry between Morgan and Shippen had grown into misunderstanding, and the misunderstanding had settled into invincible animosity. Their colleagues in the faculty and profession at large could not avoid taking sides—or having some innocent action considered as a taking of sides. For a third of a century the feud left its scars on medical profession and practice in Philadelphia and nearly destroyed the Medical School itself.

To this trouble were added in 1775 the demands and dislocations of war. Morgan was appointed director-general of the Hospital of the Continental Army. Shippen joined the army the following year, made use of Morgan's difficulties in administration to advance himself, and, replacing his adversary, served from 1777

to 1781 as director-general. Rush also entered the medical service, but resigned to press his and Morgan's charges against Shippen, who was eventually court-martialed. The result of all this, and of the unedifying newspaper war the principals carried on, was still further to unsettle the profession in Philadelphia and the Medical School. As for the students, many who might have come to Philadelphia for the lectures went instead directly into the army as surgeon's mates; while a few, like George Logan, left the country to get their medical training abroad. The military surgeons and mates who attended lectures in the winters hardly offset the loss of regular students; and for six years no degrees were conferred.

The post-war period was one of reorganization and expansion in medicine as well as in other matters. The trustees of the University succeeded in reassembling a faculty, although Morgan refused reappointment and Rush made difficulties because Shippen was included. Two important new medical institutions appeared. In 1786 the Philadelphia Dispensary opened, served by younger physicians, and complementing the Hospital by offering free medical treatment to walking cases. And in 1787 a professional society was established, the College of Physicians of Philadelphia, with John Redman, [6] a practicing physician for over forty years, as president. The College set a standard of professional conduct and scientific practice; it provided a forum for the exchange of information and opinion; it established a library; and it sometimes acted informally as a board of health. In this capacity it appealed first to the state legislature and then to the national Congress to curb the excessive use of distilled spirituous liquors as dangerous to health.

Benjamin Rush (1746–1813). Born in Byberry Township, Philadelphia County; A.B., College of New Jersey (Princeton), 1760; M.D., Edinburgh University, 1768; professor of chemistry, College of Philadelphia, 1769; professor of the theory and practice of medicine, 1791; professor of the institutes of medicine, University of Pennsylvania, 1791; physician to the Pennsylvania Hospital, 1783; signer of the Declaration of Independence, 1776; physician-general, Middle Department, Continental Army Hospital, 1777. A passionate reformer and tireless writer, Rush promoted a score of worthy causes—abolition of slavery, education, reform of the prisons, medical care for the poor, humane treatment of the insane, temperance, international peace. He has been called "the American Sydenham" in tribute to his clinical skill; the twentieth century hails him also as "the father of American psychiatry." Of himself at the close of his life he wrote that "he aimed well." Posterity would say that often he hit his mark.

The artist completed this picture in 1783. In the background are books that formed Rush's mind and directed his conduct—Sydenham's *Works*, Sydney on Government, Franklin's *Experiments and Observations*. And as befits such a shaker as he was, Rush has just begun a manuscript: "We come now, gentlemen, to investigate the causes of earthquakes."



22. Benjamin Rush by Charles Willson Peale (American, 1741–1827)
Oil, 1783, 50¼ x 40. Lent by Mrs. T. Charlton Henry. Photograph courtesy of Henry Francis du Pont Winterthur Museum.

In 1793 the first of several desolating epidemics of yellow fever struck the city, and Philadelphia experienced all the terror, tragedy, and misery which in every age have accompanied great plagues. It also witnessed countless acts of personal charity and heroic devotion. Richard Allen and Absalom Jones, Negro ministers, remained in the city to tend the sick. Stephen Girard, whom his respectable neighbors sometimes viewed with reserve because he was a Frenchman and named his ships for the heroes of the Enlightenment, brought his organizing abilities to the fever hospital at Bush Hill. "For the moment," he wrote, "I have devoted all my time and my person, as well as my little fortune, to the relief of my fellow citizens." Most of the physicians and their apprentices could be numbered among the heroes of the epidemic. At all hours of the day and night they answered the calls of the sick; they examined patients in the streets, treated patients in their shops, and even prescribed for the sick as they snatched a hurried meal at their tables, until they collapsed from exhaustion or fell victims to the disease themselves. James Hutchinson was one of those who died; another was Peter Sonmans Glentworth, the doctor son of Dr. George Glentworth [25].

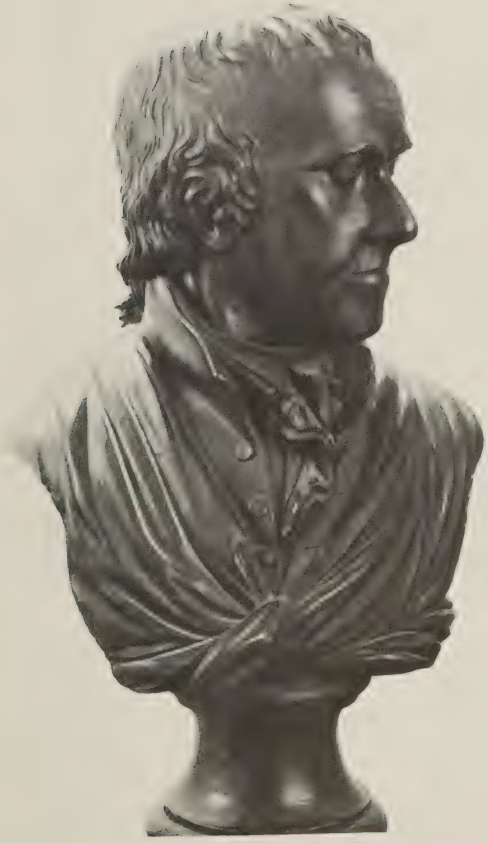
No one understood what caused the fever or how it was carried (though Rush came tantalizingly close when he remarked that mosquitoes were unusually plentiful that summer), and so most of the remedies were of doubtful worth and those that succeeded had only an empirical basis. Rush was firmly convinced that purging and bleeding—ten grains of calomel and ten ounces of blood—were the only sure cure; but this heroic treatment was questioned by many and attacked by some. As a result Rush's reputation was clouded and he was given the unenviable and undeserved character of a bleeder.

Despite this, however, the quarter century after 1790 might properly be called the age of Rush [22–24]. He was not the only medical figure in the city, or even perhaps the ablest, but he was tireless, devoted, informed, and self-confident, an effective speaker and writer, and an appealing teacher. He was the most famous physician in America, and also the most influential. In each of the four years before his death, more than 300 students enrolled in his course. Sixty members of the South Carolina Medical Society—more than half the membership—had been his students. Most students, in fact, felt they had not been properly trained unless they had spent at least a winter in Rush's class.

Rush had many interests outside his profession, but each to him was only another way of promoting the happiness of his fellow men. He advocated the abolition of slavery; he opposed capital punishment; he worked for the reform of prisons; he encouraged domestic manufactures; he proposed ways to promote peace and eliminate war. His interest in education led him to found one college



23. Benjamin Rush
by James Sharples, Sr., attrib. (English, ca. 1751–1811)
Pastel, ca. 1795–1810, 9 x 7
Lent by Independence National Historical Park



24. Benjamin Rush
by William Rush (American, 1756–1833)
Black plaster, 1813, 30 x 24
Lent by The Pennsylvania Hospital



25. George Glentworth by Charles Willson Peale (American, 1741–1827)
Oil, 1794, 32¼ x 26½. Lent by Independence National Historical Park



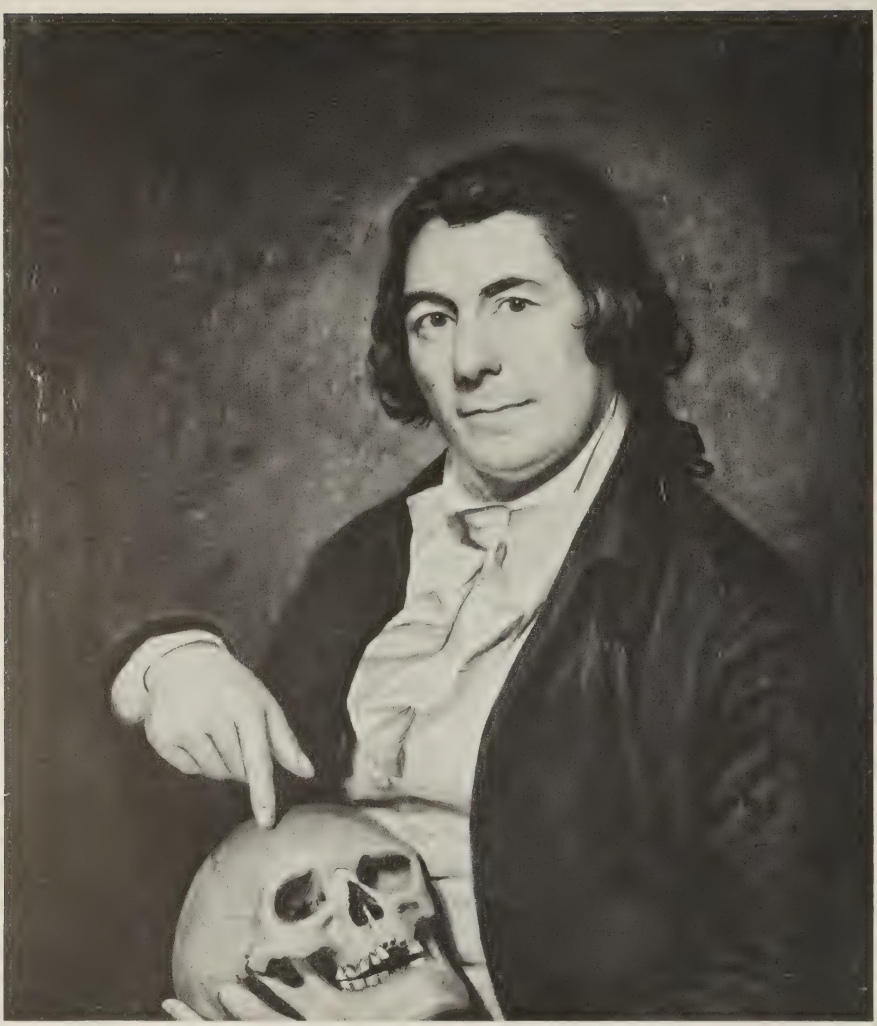
John Carson (1752–1794). Born in Philadelphia; A.B., College of Philadelphia, 1771; M.D., Edinburgh University, 1776; physician to the Philadelphia Dispensary, 1786; surgeon, First Troop, Philadelphia City Cavalry, 1786; professor of chemistry, University of Pennsylvania, 1794.

26. John Carson
by Rembrandt Peale, attrib. (American, 1778–1860)
Oil, 24¾ x 19¼
Lent by The College of Physicians of Philadelphia

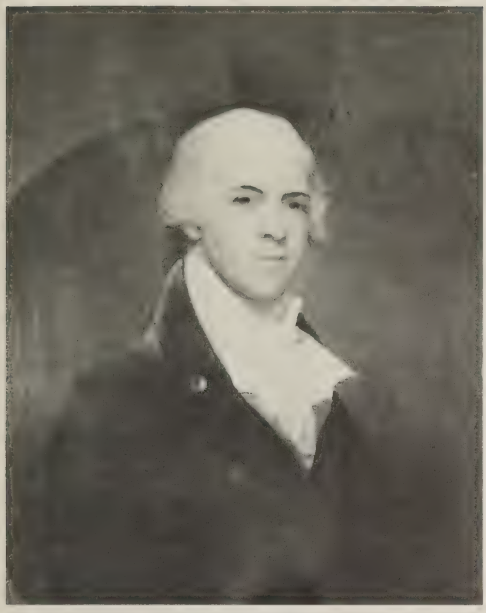
for Presbyterians (Dickinson, at Carlisle) and another for Germans (Franklin, now Franklin and Marshall, at Lancaster), to recommend that school texts be rewritten suitably for the children of American republicans, and to propose a national system of education capped by a federal university which would train men for careers of public service. Like some other physicians, George Logan [28] for example, he was early and late an advocate of temperance in eating and drinking. His medical experience and his humanitarian impulses found an outlet in measures to reform the care of the insane at the Pennsylvania Hospital and in the publication of his *Medical Inquiries and Observations upon the Diseases of the Mind* in 1812. When he died his students asked that his portrait be painted. Thomas Sully's magnificent and familiar painting hangs in the Hospital to this day.

Thanks to Rush and a body of well-trained, experienced practitioners, thanks

George Glentworth (1735–1792). Born in Philadelphia; M.D., Edinburgh University, 1758; practiced medicine in Philadelphia; surgeon, General Hospital, Continental Army, 1777; physician to Philadelphia Almshouse, 1779; inspector, Humane Society, 1782. His garden was notable in Philadelphia for its "numerous collection of beautiful bulbs and other flowers" imported from Holland. The author of his obituary wrote: "As a physician he was eminent and useful; and, to a fine genius, joined an excellent heart." Peale painted this portrait after its subject's death, which suggests that Glentworth's son, Dr. Plunket Fleeson Glentworth, may have been the artist's model.



27. John Meer by Rembrandt Peale (American, 1778–1860)
Oil, ca. 1801, 28¼ x 24. Lent by Mrs. John Henry Lewin



28. George Logan
by Gilbert Stuart (American, 1755–1828)
Oil, ca. 1803–04, 28¼ x 23¼
Lent by The Historical Society of Pennsylvania

George Logan (1753–1821). Born at "Stenton," near Philadelphia; M.D., Edinburgh University, 1779; traveled in France, where he visited Benjamin Franklin; engaged in farming and was a founder of the Philadelphia Society for Promoting Agriculture, 1785; member of the Pennsylvania Assembly, 1785; United States Senator, 1801. A devoted advocate of peace, Logan at his own expense went to France, 1798, where he treated with the Directorate, obtaining some concessions in French policy toward the United States. To prevent similar private diplomatic negotiations in the future, Congress passed the "Logan Act," 1799; in defiance of it, Logan went to England, 1810, in an unsuccessful attempt to avert the War of 1812. Of him his wife Deborah, historian and annalist, wrote: "He was a most true republican, contemning luxury and despising false glory . . . having in his own mind realized that happy state in which he could call every country his country, and every man his brother."

to the Medical School and the Pennsylvania and other hospitals, Philadelphia at the beginning of the nineteenth century was pre-eminently the place in America to study medicine. That students should come here from the southern states was to be expected, for the city was easily accessible to them; but they came from New York and New England as well, though both Harvard and Columbia Colleges had medical departments. There was an honest tribute in the decision of Daniel Coxe to send his son John Redman Coxe from London to Philadelphia in 1791 because he thought the "lights & practical aids" of medicine better taught there than in Britain. A few years later, in 1802, President Dwight of Yale, having decided to establish a chair of natural philosophy, selected as the incumbent a promising young New Haven lawyer, whom he sent to the University of Pennsylvania

John Meer (1756–1834). Born near Birmingham, England; came to Philadelphia, 1793; a friend of Charles Willson Peale, Rembrandt Peale, and Thomas Paine. He was a living vindication of Benjamin Rush's therapeutics: when Meer became ill of yellow fever, Rush removed 72 ounces of blood, yet—Rush would have said, "and"—the patient recovered.



James Woodhouse (1770–1809). Born in Philadelphia; A.B., University of the State of Pennsylvania, 1787; M.D., University of Pennsylvania, 1792; founded the Chemical Society of Philadelphia, 1792; professor of chemistry, University of Pennsylvania, 1795; author, *The Young Chemist's Pocket Companion*, 1797, a student manual. Though "a neat experimenter," he was criticized because of an aversion to theorize. "A person of genius who heard several of his lectures," according to his preceptor and colleague Benjamin Rush, "said he was a mere *fac totum*, meaning that his lectures contained nothing but facts." He was often vulgar and insulting, spoke ill of everyone, and had no friends; and "though a medical Professor he scouted the utility of medicine upon all occasions."

29. James Woodhouse
by Charles Willson Peale (American, 1741–1827)
Oil, 1818, 23 x 20
Lent by The University of Pennsylvania



Enoch Edwards (1751–1803). Born in Philadelphia County; studied medicine under Benjamin Rush, who found him "idle and dissipated" as a youth, but considered him "an active, intelligent, and useful member of Society" when he was settled; member of the Pennsylvania Provincial Congress, 1776; surgeon in the Revolutionary War; justice of the peace, 1777; member of the Pennsylvania convention for ratifying the Federal Constitution, 1787; judge, 1791. He was one of the thinnest men Charles Biddle ever knew, with a bad cough that troubled him for thirty years. He used to say that he had the advantage of his friends—they changed, but he could never look worse.

Benbridge, who was the half brother of Edwards' wife, may have painted this portrait as a wedding present, 1779. He put himself in the lower left corner.

Dr. Edwards is the central standing figure.

30. Enoch Edwards in "Family Group"
by Henry Benbridge (American, 1744–1812)
Oil, ca. 1779, 30 x 23¾
Philadelphia Museum of Art: Given by Miss Fannie Ringgold Carter



31. Enoch Edwards by Benjamin West (American, 1738–1820)
Oil, 1795, 36 x 28. Lent by Amherst College

Medical School to be trained for his post. This experiment having succeeded brilliantly, a few years later, when the Yale Medical School was projected, Dwight chose for the professorship of anatomy a Yale tutor who had been a doctor's apprentice and sent him to Philadelphia for two years to study anatomy under Caspar Wistar [32] and to collect medical books and anatomical specimens for the new school.

Benjamin Silliman and Jonathan Knight were not the only ones who carried the learning of Philadelphia to distant institutions and places. David Hosack, of the class of 1791, had a distinguished career as a teacher of medicine, medical editor, and botanist in New York. Charles Caldwell [33], of the class of 1796, practiced and taught in the Middle West, where he was a founder of three medical schools and a teacher in two. Daniel Drake, who studied under Rush in 1805 and returned to receive his degree in 1816, was founder, professor, and the principal support of four or five medical schools in the West and acquired lasting fame as author of the great work on the *Diseases of the Interior Valley of North America.* Jacob Bigelow of Massachusetts, of the class of 1810, wrote on the self-limitation of disease, invented the word "technology," and, combining the interests of physician, landscapist, and sanitarian, was a founder of Mount Auburn Cemetery in Boston. Another Bostonian at Pennsylvania was John Fothergill Waterhouse, of the class of 1813—the last Rush taught. He was the son of Benjamin Waterhouse, who was a nephew of the great Dr. Fothergill, a graduate of Leyden, and now professor in the Harvard Medical School. In his own name and person, young Waterhouse reflected the history of medicine in America through three generations from its foundations in the eighteenth century to its coming of age in Philadelphia in the nineteenth.

Caspar Wistar (1761–1818). Born in Philadelphia; M.B., University of the State of Pennsylvania, 1782; M.D., Edinburgh University, 1786; professor of chemistry, College of Philadelphia, 1789; professor of anatomy, University of Pennsylvania, 1808; physician to the Pennsylvania Hospital, 1793; president, American Philosophical Society, 1815.

His pupil Charles Caldwell—not often a generous critic—considered Wistar too easily disconcerted as a teacher, indifferent as a writer, and indecisive as a surgeon. "No sooner did he engage in an important operation, than the primitive sensibility of his system returned, his hand became unsteady, and his mind at times perceptibly discomposed. In consequence of this, did any unexpected event occur, even an unlooked-for jet of blood from an artery, the expedient best calculated to remedy the evil seldom, if ever, presented itself with promptness—much less with coolness on his part." Doubtless his paleontological investigations better suited Wistar's temperament. His hospitality to his scholarly friends and strangers has been commemorated since his death by the Wistar Association and its Parties.



32. Caspar Wistar by William Rush (American, 1756–1833)
Terra cotta bust, ca. 1812–13, life size. Lent by The Pennsylvania Academy of the Fine Arts



Charles Caldwell (1772–1853). Born in Caswell County, N. C.; military surgeon in the Whiskey Insurrection, 1794; M.D., University of Pennsylvania, 1796; editor, *The Port Folio*, 1812; professor of the institutes of medicine and clinical practice, Transylvania University, 1819; professor of the institutes of medicine, Louisville Medical Institute, 1837. Egotistical, opinionated, contentious, and humorless, "he misapplied talents of a high order . . . and . . . wasted his resources upon comparatively trifling matters," was Samuel D. Gross's judgment of the man. Caldwell left an account of his life which, Sir William Osler remarked, would surely survive, since it was "pickled . . . in vinegar."

33. Charles Caldwell
by Thomas Sully (American, 1783–1872)
Oil, 29¼ x 24½
Lent by The College of Physicians of Philadelphia



Thomas Parke (1749–1835). Born in East Caln Township, Chester County, Pa.; M.B., College of Philadelphia, 1770; studied in London and Edinburgh; physician to the Pennsylvania Hospital, 1777; director, Library Company of Philadelphia, 1778; president, College of Physicians of Philadelphia, 1818. Cautious and conservative, "safe and judicious," Parke's practice, in the words of his eulogist, "was marked with more solidarity than brilliance—by plain common sense, rather than by the excursive flights of genius. . . . He knew too well how to estimate the powers of the *vis medicatrix naturae*, and was not very readily disposed to forsake the old and well tried for some new formed acquaintance whose character he did not understand."

34. Thomas Parke
by Thomas Sully (American, 1783–1872)
Oil, 1822, 36 x 28
Lent by The Library Company of Philadelphia
Photograph courtesy of
Henry Francis du Pont Winterthur Museum

Abraham Chovet (1704–1790). Born in England; demonstrator in anatomy, Company of Barber-Surgeons, 1734; practiced in the West Indies; came to New York, 1769; settled in Philadelphia, where he practiced and lectured in his private school. "He was a minute anatomist, but grossly ignorant of medicine," wrote Benjamin Rush in disapproval. "He rejected all the improvements in physic, within the last 60 years, and despised all modern physicians. He gloried in his age, and used to say that physician was an imposter who did not live till he was 80. . . . He had lost all his teeth [as this wax portrait by his apprentice shows], which led him to say he could not go to hell, for there would be gnashing of teeth, which could not be his punishment."



36. Abraham Chovet
by Jan Eckhout (Dutch?, active 1770)
Wax medallion, ca. 1770, 7 x 5
Lent by The Pennsylvania Hospital

WITH THE DEATH OF RUSH an era ended. He was the last of the original faculty of the first medical school in the United States. By 1815 a new generation of doctors had come to maturity, trained in American schools, supported and encouraged by American societies and journals, yet more keenly aware than even Rush had been of what medical scientists and physicians elsewhere were doing. The half century from Rush's death through the Civil War saw many changes and much progress.

Of these changes the most apparent was the expansion of medical education. Since before the Revolution courses had been offered, principally in anatomy, by

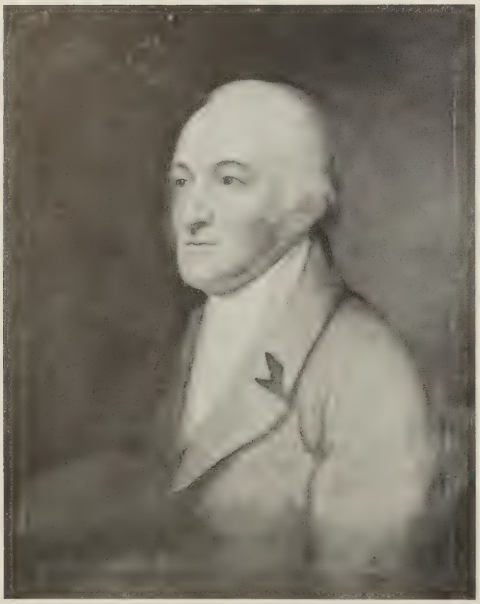
35. Samuel Coates by Thomas Sully (American, 1783–1872). Oil, 1812, 58 x 90. Lent by The Pennsylvania Hospital.

Samuel Coates (1748–1830). Born in Philadelphia; partner in the merchant firm of Reynell & Coates and other firms; manager, Pennsylvania Hospital, 1785; secretary, 1786; president of the Board of Managers, 1812; overseer of the public schools, 1786; treasurer, Library Company of Philadelphia, 1784; director, Bank of the United States, 1800. Upon his death the surviving Hospital Managers paid him a deserved tribute: "No individual ever connected with the administration of the Hospital bestowed so much personal attention upon its affairs; and a considerable portion of the funds, which have enlarged the usefulness of this noble charity, were obtained by his impressive and unwearied petition in its behalf." *Frontispiece*



Benjamin Duffield (1753–1799). Born in Bucks County, Pa.; A.B., College of Philadelphia, 1771, where he also studied medicine; surgeon in the Continental Army; private lecturer on midwifery and other subjects, 1793; attended yellow fever patients at Bush Hill hospital, 1793. Genial, hospitable, a man of social charm, Duffield made his house the resort of scholars, wits, and literary men. He wrote occasional verse, appreciated music, and collected paintings: one of these, "an oil painting on cloth . . . representing an eruption of Mount Vesuvius, by moonlight . . . a little injured in the sky," he presented to Pierre E. DuSimitière's museum—the first in America.

37. Benjamin Duffield
by unknown (American, 19th c.)
Oil, 14 x 11¼
Lent by The College of Physicians of Philadelphia



38. Benjamin Smith Barton
by Charles Willson Peale, attrib. (American, 1741–1827)
Oil, 28 x 23
Lent by The University of Pennsylvania

Benjamin Smith Barton (1766–1815). Born at Lancaster, Pa.; studied medicine at Edinburgh University, where he was a president of the Royal Medical Society, 1788; professor of natural history and botany, College of Philadelphia, 1789; succeeded Rush as professor of theory and practice of medicine, 1813; founder and editor, *Philadelphia Medical and Physical Journal*, 1804; author, *Elements of Botany*, 1803. A tireless writer and collector in botany and natural history, he was the author of papers on Indian mounds of the Ohio Valley, rattlesnakes, earthquakes, and hummingbirds. Charles Caldwell described his appearance: "In person, though not critically handsome, he was manly and striking. In stature, he was considerably above the middle height. His figure was well proportioned, his features strong, and his countenance lit up by eyes inordinately large, black, and full of fire." He had a good mind, was industrious, and stimulated other naturalists and physicians. But by being too eager to have credit, too concerned for fame and reputation, and too certain he was right in everything, he missed greatness.

39. Thomas Cooper
by Charles Willson Peale (American, 1741–1827)
Oil, 1819, 23 x 19¼
Lent by The College of Physicians of Philadelphia



Thomas Cooper (1759–1839). Born in London; studied at Oxford University; attended lectures at Middlesex Hospital, London; barrister-at-law, 1787; settled at Northumberland, Pa., with his friend Joseph Priestley, 1794; jailed for violating the Sedition Act, 1800; judge of Luzerne County, Pa., 1804; professor of chemistry, Dickinson College, 1811; and University of Pennsylvania, 1816, University of Virginia, 1819, and University of South Carolina, 1820. At South Carolina, of which he soon became president, he also taught political economy and, repudiating his earlier Jeffersonian philosophy, vigorously defended slavery, states rights, and the Southern position on tariffs. He also took a lead in establishing the first medical school and first insane asylum in the state.

A man of astonishing versatility, who wrote important books on chemistry, politics, and law, he was a typical child of the Enlightenment. An enthusiastic, often credulous, frequently truculent advocate of liberty and equality; an apostle of reason who was often unreasonable, he aroused passionate controversy wherever he went; and the inscription on his gravestone records that the monument was "erected by a portion of his fellow-citizens."

Philip Syng Physick (1768–1837). Born in Philadelphia; A.B., University of the State of Pennsylvania, 1785; house surgeon, St. George's Hospital, London, 1790; M.D., Edinburgh University, 1792; physician to the Pennsylvania Hospital, 1794; professor of surgery, University of Pennsylvania, 1805. He was the author of many advances in surgical procedures and in surgical instrumentation, including the introduction of animal ligatures. Entering practice, "for several years he trod the alleys and by-ways of his native city before his income was sufficient to pay for his shoe-strings and the powder on his queue," wrote Samuel D. Gross. But at the end of his life his fees amounted to $20,000 a year and he died worth half a million. Long before his death he was styled "the Father of American Surgery," and for nearly a third of a century he was "the head and front of the profession."

40. Philip Syng Physick
by William Rush (American, 1756–1833)
Terra cotta bust, ca. 1812–13, life size
Lent by The Pennsylvania Academy of the Fine Arts





41. Thomas Tickell Hewson
by Thomas Sully (American, 1783–1872)
Oil, 20¼ x 25
Lent by The College of Physicians of Philadelphia

42. Robert Hare
by Rembrandt Peale (American, 1778–1860)
Oil, ca. 1820–25, 28⅜ x 23⅜
Lent by Independence National Historical Park



Thomas Tickell Hewson (1773–1848). Born in London, the second son of the anatomist William Hewson and of Mary Stevenson Hewson, Franklin's friend and correspondent; A.B., University of the State of Pennsylvania, 1789; studied medicine under Dr. John Foulke in Philadelphia, at St. Bartholomew's Hospital, London, and in Edinburgh; physician to the Walnut Street Prison, 1806; to the Philadelphia Almshouse, 1811; to the Pennsylvania Hospital, 1818; professor of comparative anatomy, University of Pennsylvania, 1816; established a private medical school, 1822; president, College of Physicians of Philadelphia, 1835. His work during epidemics was several times formally acknowledged by public authorities. One of the physician members of the Cholera Medical Board of the Board of Health in 1832 testified of Hewson, who was president, that "though the duties of his station were sufficiently delicate, and required of him, on more than one occasion, an exercise of authority, and a reversal of the decision of the physicians placed under his superintendence, yet not a single angry feeling was excited; and in no instance was there an appeal from his decisions made to the Board."

Robert Hare (1781–1858). Born in Philadelphia; working as a youth in his father's brewery, he became interested in chemistry, which he studied under James Woodhouse while continuing to work in the brewery, which he managed until 1816; honorary M.D., Harvard College, 1816; professor of chemistry, College of William and Mary, 1818; professor of chemistry, University of Pennsylvania, 1818. Although a brilliant experimenter, the inventor of much chemical apparatus, recipient of the Rumford Medal of the American Academy of Arts and Sciences, he was an uninteresting lecturer who could not control his class and so, it was said, usually invited a few ladies onto the platform to protect him from the students' insults if the experiment failed. In addition to his scientific work, he prepared pamphlets on banking and currency, wrote a novel, and, at the end of his life, advanced "proofs" that he was in communication with the dead, notably with Franklin, who, Hare reported, expressed approval of his electrical theories. Samuel D. Gross described Hare as "a grand specimen of the *genus homo*, with broad shoulders and an immense head. . . . He read much, thought much, talked much."

private physicians like Thomas Cadwalader and Abraham Chovet [36], who had no connection with any institution. William Shippen, Jr.'s lectures in 1762 had also begun in this way. After the war such courses increased. John Foulke taught anatomy (he was almost equally interested in aeronautics); Benjamin Duffield [37] began in 1793 to deliver lectures on midwifery at the Almshouse, where Thomas Chalkley James followed him in 1803. Nathaniel Chapman in 1817 founded the Medical Institute of Philadelphia to offer post-graduate training to qualified physicians. In 1820 the Philadelphia School of Anatomy was established, first with Dr. George McClellan as its principal teacher, later with Dr. John Godman.

By the end of the nineteenth century private schools had multiplied beyond need or reason, abandoning even a pretense of maintaining any sort of standard; and they acquired a bad name. But in the first half of the century private schools held high standards, commanded the services of well-qualified men, and were valuable adjuncts to the formal schools. Positions in them were often stepping-stones to a professorship at Pennsylvania or Jefferson.

So it proved for Dr. McClellan, the able but impulsive teacher in the Philadelphia Anatomical School. In 1825 he obtained a charter for a new medical school in Philadelphia, assembled a faculty, and enrolled a class. Within twenty years Jefferson Medical College had over 400 students and was the largest in the country. The reaction of the University of Pennsylvania's professors and partisans to the appearance of a rival was swift and, to the twentieth century, almost unbelievable. Jefferson faculty and students were slighted, insulted, and slandered; and one Penn professor, William Potts Dewees [43], refused to acknowledge the gift of a book by Samuel D. Gross on the ground that no member of the University could notice anything coming out of Jefferson. In 1840 the two medical schools were the largest in the country, and one fifth of all the medical students in the United States were enrolled in one or the other. There could be no doubt that Jefferson's students were well trained, or that a faculty which included Gross, Dunglison [45], and Eberle [46] was equal to the best.

Meanwhile Dr. McClellan quit Jefferson, and in 1839 founded the Medical Department of Pennsylvania (now Gettysburg) College. In rapid succession the Philadelphia College of Medicine, 1846, Medico-Chirurgical College, 1849, and Woman's Medical College, 1850, arose. The Homeopathic Medical College of Pennsylvania opened its doors in Philadelphia in 1848, and received support from some distinguished converts to the doctrines of Samuel Hahnemann.

The increase in facilities for classroom instruction in medicine was accompanied, though not at equal pace, by an increase in opportunities for clinical



43. William P. Dewees by John Neagle (American, 1796–1865)
Oil, 58¾ x 44¾. Lent by The University of Pennsylvania

Thomas Dent Mütter (1811–1859). Born in Richmond, Va.; M.D., University of Pennsylvania, 1831; practiced in Philadelphia (making calls in a low carriage drawn by "a tall gray horse" driven by a liveried servant) and taught surgery in the Medical Institute, 1835; professor of surgery, Jefferson Medical College, 1841. He had studied at Paris when Dupuytren, Roux, Lisfranc, Velpeau, Louis, and Chomel were at the height of their fame. "After he became a teacher," Samuel D. Gross recalled, "Mütter loved to refer to these men as his 'friends,' and to hold them up to the admiration of his pupils. Like most of the young doctors who went abroad in those days, . . . he considered one Frenchman equal to a dozen Americans." To the College of Physicians of Philadelphia he bequeathed his anatomical museum, which is his lasting monument.



44. Thomas Dent Mütter
by Thomas Sully (American, 1783–1872)
Oil, 1841, 24 x 20
Lent by The Jefferson Medical College and Medical Center

instruction. The Pennsylvania Hospital continued, as before, to allow students in the wards, but the hospital was a private foundation, the responsibilities of the managers for the care of patients and of professors for the instruction of students were not always identical, and there were misunderstandings. The same was true at the Philadelphia Almshouse, which necessarily had always provided medical care for its indigent inmates, but on moving to Blockley in 1832 became the city hospital. Nathaniel Chapman, William Gibson [47], William E. Horner [48], and others lectured there, but the relation was tenuous: an uproar over a cock-

William Potts Dewees (1768-1841). Born near Pottstown, Pa.; studied medicine at the University of Pennsylvania, 1787; settled in Philadelphia as a practicing physician, 1793; M.D., University of Pennsylvania, 1806; adjunct professor of obstetrics, University of Pennsylvania, 1825; professor of obstetrics, 1834; author, *A Compendious System of Midwifery*, 1824. "No American writer had, up to the time at which he taught, made so profound an impression as he upon the professional mind," declared Samuel D. Gross. "Whatever he wrote, or spoke in the lecture-room, became the law and gospel with medical men. . . . No woman of any social position in Philadelphia considered herself safe if she could not have Dewees in her confinement."



45. Robley Dunglison
by Thomas Sully (American, 1783–1872)
Oil, 1868, 29½ x 24½
Lent by The College of Physicians of Philadelphia

Robley Dunglison (1798–1869). Born at Keswick, Cumberland, England; licentiate, Royal College of Surgeons, London, 1818; M.D., Erlangen University, 1823; professor of medicine, University of Virginia, 1825; professor of medicine, University of Maryland, 1833; professor of the institutes of medicine, Jefferson Medical College, 1836. A pioneer in the systematic teaching of physiology, he was also active in promoting the printing of books with raised letters for use by the blind. His *Commentaries on the Diseases of the Stomach and Bowels of Children*, 1824, attracted wide attention and led to Thomas Jefferson's offer of the chair at Virginia. William Osler referred to Dunglison's *New Dictionary of Medical Science and Literature*, 1833, when he wrote: "Thomas Jefferson did a good work when he imported him [Dunglison] from London, as Dunglison had all the wisdom of his day and generation combined with a colossal industry. He brought great and well deserved reputation to Jefferson College. After all, there is no such literature as a Dictionary, and the twenty-three editions through which Dunglison passed is a splendid testimony to its usefulness. It was one of my stand-bys. . . ."



46. John Eberle
by Jacob Eichholtz (American, 1776–1842)
Oil, 1827, 42 x 33
Lent by The Jefferson Medical College and Medical Center

John Eberle (1787–1838). Born probably at Hagerstown, Md.; M.D., University of Pennsylvania, 1809; surgeon in the War of 1812; founder and editor, *American Medical Recorder*, 1818; one of the founders of Jefferson Medical College and a member of its first faculty, 1825; professor of materia medica, Medical College of Ohio, 1830; professor of the theory and practice of medicine, Transylvania University, 1837; author, *A Treatise of the Materia Medica and Therapeutics*, 1822, and *A Treatise on the Practice of Medicine*, 1838, in which William Osler "found all sorts of useless information in therapeutics so dear to the heart of a second-year student." A short, dark-visaged Pennsylvania German, who had not spoken English until he was 12, Eberle was "a good writer, and well versed in medical lore," an instructive teacher whose "great fault," in Samuel D. Gross's mind, "was his citation of authorities, and his want of confidence in the statement of his own views."

roach on the interns' dinner table resulted, in 1845, in closing the hospital to students for nine years. The period saw the establishment of a new hospital—Kirkbride's at 49th and Market Streets—the Pennsylvania Hospital's enlarged and separate department for mental diseases. This hospital was evidence that newer methods of treatment were effective and that the number of recognizably mentally ill was increasing (as Benjamin Rush expected would happen in a republican society where free men bear the strain of choice).

Another characteristic of the years between 1815 and 1865 was the increasingly scientific character of medicine. Edinburgh, which had attracted most American students before 1815, now began to give way to Paris as a place of study. There the great clinician Pierre-Charles-Alexandre Louis taught his students the importance of keeping records, counting their cases, and drawing conclusions from recorded likenesses and differences. One of his American students was William Wood Gerhard of Philadelphia; and it was Gerhard who applied his master's statistical methods to cases in a typhus epidemic, noted distinctions among them, and so identified typhoid fever as distinct from typhus.

As methods grew more precise, so did instruments. For centuries many operations in surgery were impossible to undertake and all were strictly limited by the patient's capacity to bear pain. In the circumstances speedy and dexterous operators like John Jones were at a premium; and even delicate instruments could accomplish hardly more than crude ones. The discovery of ether anesthesia (which a generation of students had used to enliven their revels) put the patient to sleep, gave the surgeon time, and opened the way to refinements in instrumentation and technique. So common did anesthesia become that Samuel D. Gross, who began to practice surgery before its discovery but achieved his greatest reputation afterwards, scarcely mentioned it in his autobiography.

Other instruments too began to appear in the physician's office and laboratory. Among the papers of the Pennsylvania Hospital is the diffident request of William Pepper and other physicians in 1849 that a microscope and chemical apparatus be purchased, since "recent discoveries in Medical Science clearly indicated the great utility of microscopic and chemical examinations of the different structures and fluids of the human body."

As the nineteenth century moved on, there was a steady movement toward professionalization in medicine. The leaders of the profession began to define conduct in more specific terms than was usual in the eighteenth century. In particular, they withdrew from political activity, and, in general, from public support of controversial issues. Benjamin Rush signed the Declaration of Inde-



47. William Gibson
by John Neagle (American, 1796–1865)
Oil, 1855, 50 x 40
Lent by The University of Pennsylvania

William Gibson (1788–1868). Born in Baltimore; studied at St. John's College, Annapolis, and at Princeton, but did not graduate; studied medicine at University of Pennsylvania; M.D., Edinburgh University, 1809; professor of surgery, University of Maryland, 1811; professor of surgery, University of Pennsylvania, 1819. He is said to have been the first to introduce clinical teaching by means of the ward class; that is, instead of taking students through the wards, making remarks on whatever patients he encountered, he collected groups of similar cases from various wards and brought these before the students in the amphitheater, and thus was able to provide systematic instruction.

48. William E. Horner
by John Neagle (American, 1796–1865)
Oil, 1853, 20 x 17
Lent by The University of Pennsylvania



William Edmonds Horner (1793–1853). Born at Warrenton, Va.; M.D., University of Pennsylvania, 1814; military surgeon, War of 1812; prosector in anatomy under Wistar and Physick, University of Pennsylvania, 1816; professor of anatomy, 1831; dean of the medical faculty; author of *A Treatise on Pathological Anatomy*, 1829, the first work on its subject to appear in the United States. For his services in the cholera epidemic of 1832 the Philadelphia City Council presented him with a silver pitcher. Dr. Samuel Jackson has left an account of Horner's fortitude while waiting for death. "He was lying on a couch; Dr. Henry Smith and myself sitting on each side. Dr. Horner was suffering some pain, a new symptom that had just commenced. He demonstrated with his finger the different regions of the trunk, enumerating the organs they contained, and the state of each, and indicated the exact seat wherein he then suffered the most. This was done with the interest and earnest manner of a demonstration to his class. I was so struck with it as to call the attention of Dr. Smith to this display of the 'ruling passion strong in death.' 'Look! here is the anatomist dissecting his body,—making a post-mortem before he is dead!' The remark so amused Dr. Horner that he laughed heartily—in which we joined him. At the end he said: 'Well, I have not had so good a laugh for a long time.' This occurred on the third day before his death."

John Abraham Elkinton (1801-1853). M.D., University of Pennsylvania, 1822; lived at Haddonfield, N. J.; physician of the Port of Philadelphia, 1836. A strong opponent of capital punishment, he was an equally spirited advocate of rural cemeteries, and laid out Père Lachaise Cemetery at Broad and Montgomery Streets in 1837. No one noticed that this might be thought to involve a conflict of interest in a physician, but Philadelphians hooted derisively at the pretentious French name, and Père Lachaise was quickly renamed Monument Cemetery, whose plans Elkinton holds in his hand.



49. John Elkinton
by John Neagle (American, 1796–1865)
Oil, 1840, 31 x 26
Lent by The University of Pennsylvania

pendence, but Samuel D. Gross a century later was rather proud that he had but seldom voted. Medical societies, too, tended to concentrate on strictly professional matters. One of the first public acts of the College of Physicians of Philadelphia in 1787 was to appeal to the Assembly of Pennsylvania and then, in 1790, to Congress to control the manufacture and sale of distilled spirituous liquors as inimical to health. In the 1820's and 1830's the College took a lead in the preparation of a National Pharmacopoeia; and two Philadelphia physicians, George B. Wood and Franklin Bache prepared a National Dispensatory to illustrate it.

Many of the movements of these years are illustrated in the career of Nathaniel Chapman [50], who taught and practiced medicine in Philadelphia for fifty years. A native of Virginia, Chapman began the study of medicine first under Dr. Elisha Cullen Dick of Alexandria, who was Washington's physician; next as a private pupil of Benjamin Rush; then at the University of Pennsylvania, from which he was graduated in 1801; and finally in Britain, where he was a pupil of John Abernethy at Bart's and spent two years at Edinburgh. In the Scottish capital the Earl of Buchan gave Chapman a special welcome because he had been a neighbor of His Lordship's special hero General Washington, and entrusted him on his return to Philadelphia with a gift for Rush. This was a box made of wood from the oak which had sheltered Wallace; Buchan had given it some years before to Washington, with a request that Washington bequeath it to

the man he judged most worthy to receive it; but Washington had graciously willed it to Buchan. Now it crossed the ocean once more, as the eccentric nobleman's tribute to Rush. Unfortunately, Chapman's trunk was stolen between New York and Philadelphia, the box never reached Rush, and the chain was broken.

Chapman began practice in Philadelphia with several advantages. He came of a good family, and he had an attractive personality, gay and witty, with a fund of anecdotes, which he told well, and a penchant for punning. ("Upon my word," he exclaimed to a baker who behaved politely toward him, "you are the best bread man in Philadelphia!") He was well trained, capable and intelligent; and he was industrious. To these natural advantages he added in 1808 marriage to Rebecca Biddle, daughter of Colonel Clement Biddle.

During most of his career Chapman was associated with the University of Pennsylvania; first as adjunct to Dr. Thomas Chalkley James, professor of midwifery, 1810, then as professor of materia medica, 1813, and finally as professor of the theory and practice of medicine, 1816. He was also a physician to the Philadelphia Almshouse, 1807, surgeon to the First Troop, Philadelphia City Cavalry, 1804, and professor of anatomy at the Pennsylvania Academy of the Fine Arts, 1812. His *Elements of Therapeutics and Materia Medica*, 1817, the first work on the subject published by an American, quickly became an authoritative text and went through several editions. Chapman also founded and edited for several years the *Philadelphia Journal of Medical and Physical Sciences*, which as the *American Journal* survives to this day.

Inevitably, such a man received the highest professional honors. Chapman was elected president of the Philadelphia Medical Society in 1816 and of the Academy of Medicine in 1821. He held a succession of offices in the American

Nathaniel Chapman (1780–1853). Born in Fairfax County, Va.; M.D., University of Pennsylvania, 1801; studied in London and Edinburgh; professor of materia medica, University of Pennsylvania, 1813; professor of the theory and practice of medicine, 1816; founded Medical Institute of Philadelphia, the first postgraduate medical school in the United States, 1817; editor, *American Journal of the Medical Sciences*, 1820; president, American Philosophical Society, 1846; elected by acclamation first president, American Medical Association, 1848.

"Chapman was the prince of good fellows, popular alike with the profession and the people of Philadelphia," said Samuel D. Gross. "For nearly half a century he was without a peer among the medical men of his adopted city."



50. Nathaniel Chapman by Thomas Sully (American, 1783–1872)
Oil, 41¼ x 32¼. Lent by The College of Physicians of Philadelphia



51. Elisha Kent Kane
by Thomas Hicks (American, 1823–1890)
Oil, 1859, 72 x 53
Lent by The Museum of the United States Naval Academy

Elisha Kent Kane (1820–1857). Born in Philadelphia; studied at the University of Virginia, from which he was forced to withdraw by an attack of rheumatic fever; physician, Philadelphia General Hospital, 1840 (while still a medical undergraduate and before he was 21); M.D., University of Pennsylvania, 1842; as assistant surgeon, United States Navy, attached to the China Mission of Caleb Cushing, he visited the Philippine Islands, where he descended into the crater of the volcano of Tael and was subsequently ambushed by native warriors for this insult to their gods; practiced medicine briefly in Philadelphia, 1845; fought in the Mexican War, 1846; senior medical officer, Grinnell Expedition to search for Sir John Franklin in the Arctic, 1850; commander, Second Grinnell Expedition, 1853. On this voyage, the ship was frozen in for 20 months; Kane explored the waterways and coast, observed and recorded the natural history of the area, and finally took his party to safety in an 83-day journey over the ice—"a retreat which stands in the annals of Arctic exploration as archetype of victory in defeat." Kane's account of this expedition, *Arctic Exploration: The Second Grinnell Expedition in Search of Sir John Franklin*, 1856, has been called "the greatest book on Arctic exploration ever written," and was for nearly a generation one of the most cherished in America. Despite a chronically bad heart and though ravaged by fever on almost every journey he made, Kane lived a life of adventuresome daring, spent himself selflessly in vain efforts to save another, and made a lasting contribution to our knowledge of the North and its people. He was a romantic figure, admirable and curiously appealing to his countrymen, especially to his fellow-citizens of Philadelphia, who sensed from his career that the principles of bankers, lawyers, and even physicians do not demand all a man is capable of. His last trip was to see Lady Franklin in London, whom he promised he would take another expedition into the Arctic; he died on the way home at Havana; and his body lay in state in Independence Hall.

Philosophical Society, culminating in the presidency, 1846. And in 1848 he became the first president of the American Medical Association. There were no other nominees and he was elected by acclamation.

THE EFFECT OF THE CIVIL WAR on the medical sciences and the medical profession in Philadelphia was immediate and readily discernible. The city's medical schools had always attracted many Southerners: in 1859 more than half of the 1200 medical students came from below the Mason and Dixon line. With their peculiar dress, long hair, and bowie knives, their sometimes courtly but often violent manners, and their intolerance of any views but their own, the "Ginny students" were a colorful but restless element in the city. After John Brown's raid on Harper's Ferry in the fall of 1859, some 200 of them, led by Hunter McGuire (an advanced student of medicine who later had distinguished careers as a Confederate surgeon and a practitioner in Richmond, and was elected president of the American Medical Association), left the city to enroll in the Medical College of Virginia and other southern schools. It is worthy of at least passing note that the chiefs of the medical services of both armies in 1861 had been trained in Philadelphia.

On those who remained in Philadelphia after the withdrawal of the Southerners, the outbreak of war had its effects. The remaining Southerners, of course, left in 1861. Students like Horatio C. Wood [52], James Tyson [75], and William W. Keen [56] went from school into the army. Older practitioners and teachers like William Thomson [63], William S. Forbes [58], and John Hill Brinton [53] joined the army as regimental surgeons; while others, with compelling obligations at home, like S. Weir Mitchell [54, 55], gave their services as contract surgeons, working several hours a day in the military hospitals while carrying on private practice. Samuel D. Gross [59–61] prepared a manual of military surgery, a sort of pocket companion for young surgeons, embracing the whole of military surgery and hygiene. The little book was useful in both armies, for it was republished at Richmond.

Even the lay public was swept up in the medical work of the war. On April 22, 1861, less than two weeks after the firing on Fort Sumter, the Philadelphia Nurses Corps was formed, the first of its kind in the country, to provide nurses for the army hospitals. Through the United States Sanitary Commission, laymen helped bring about needed reforms in the medical service and gave a special kind of aid and comfort to the sick and wounded. To promote its charitable work, the Sanitary Commission of Pennsylvania, New Jersey, Maryland, and Delaware held a great fair on Logan Square during three weeks in June 1864. An enormous main building 540 feet long was flanked by others containing picture galleries, a refreshment saloon, a smoking room, a horticultural exhibit, and a brewery. In scores of booths thousands of articles were offered for sale. The citizens flocked to



52. Horatio C. Wood by Thomas Eakins (American, 1844–1916)
Oil, ca. 1889, 64 x 50. Lent by The Detroit Institute of Arts

John Hill Brinton (1832–1907). Born in Philadelphia; A.B., University of Pennsylvania, 1850; M.D., Jefferson Medical College, 1852; military surgeon in the Civil War; assigned to the office of the Surgeon-General, he helped prepare *The Medical and Surgical History of the War of the Rebellion*, 1870, and establish the Army Medical Museum; lecturer on operative surgery, Jefferson Medical College, 1865; professor of the practice of surgery and clinical surgery, 1882.



53. John Hill Brinton
by Thomas Eakins (American, 1844–1916)
Oil, 1876, 78⅜ x 57¼
Lent by The Medical Museum of the Armed Forces Institute of Pathology

buy and make their contribution to the cause; President and Mrs. Lincoln attended; and the Sanitary Fair netted more than a million dollars to purchase necessities and comforts for the sick and wounded troops. The Fair, in the rather florid words of the mayor of the city, was the means "through which the oil and wine of soothing kindness and of strengthening cheer may flow from the plenty of your homes to the need of the sick and wounded soldiers."

Not a few of the sick and wounded were brought to Philadelphia. The

Horatio Charles Wood (1841–1920). Born in Philadelphia; M.D., University of Pennsylvania, 1862; military surgeon in the Civil War; professor of botany, University of Pennsylvania, 1866; professor of materia medica and clinical professor of medicine, 1876; president, College of Physicians of Philadelphia, 1902. A man of great physical and mental vigor, and of unusual industry, Wood published six books and nearly 300 articles (the first, on the carboniferous flora of the United States, appeared when he was only 20) on natural science (botany and entomology); experimental pharmacology, physiology, and pathology; nervous diseases; and medical jurisprudence. In his classes he would denounce meddlesome therapeutics and the reckless use of drugs: "Rather than that, trust to rest, quiet and diet, and send the doctor to the North Pole."

Wood was a personal friend of the artist and owned two of Eakins' paintings.



54. S. Weir Mitchell
by John Singer Sargent (American, 1856–1925)
Oil, 1903, 38 x 30
Lent by The Mutual Assurance Company for Insuring Houses from Loss by Fire

S. Weir Mitchell (1829–1914). Born in Philadelphia; M.D., Jefferson Medical College, 1850; assistant surgeon, United States Army Hospital for Diseases and Injuries of the Nervous System, Turner's Lane, Germantown, 1863; physician, Orthopedic Hospital and Infirmary for Nervous Diseases, Philadelphia, 1872; trustee, University of Pennsylvania, 1875; first president, Franklin Inn Club, 1902; poet and novelist (*Hugh Wynne: Free Quaker*, *Constance Trescott*, the only novel of his with which he found no fault). Osler compared him to Francesco Redi "in the triple combination . . . of devotion to scientific study and to *belles lettres*, and in the position which he enjoyed in public esteem." What Samuel Johnson said of Richard Mead was equally true of Mitchell: "No man ever lived more in the sunshine of life."



55. S. Weir Mitchell
by Augustus St Gaudens (American, 1848–1907)
Bronze, 1884, 30½ x 16¼
Lent by Mrs. Joseph Carson



56. Anatomical Lecture by Dr. William Williams Keen by Charles H. Stephens (American, died 1931)
Monochrome oil sketch, 1879, 8¾ x 11. Lent by The Pennsylvania Academy of the Fine Arts

William Williams Keen (1837–1932). Born in Philadelphia; A.B., Brown University, 1859; M.D., Jefferson Medical College, 1862; military surgeon in the Civil War, serving at the first Bull Run, 1861, and at Satterlee, Christian Street and Turner's Lane Hospitals, Philadelphia, where he cared for injuries to the nerves with S. Weir Mitchell, 1863; studied in Paris and Berlin, 1864; lecturer on surgical pathology, Jefferson Medical College, 1866; professor of artistic anatomy, Pennsylvania Academy of the Fine Arts, 1877; professor of surgery, Woman's Medical College, 1884, and at Jefferson Medical College, 1889; president, College of Physicians of Philadelphia, 1900; president, American Philosophical Society, 1907. A bold and skilful surgeon, Keen was the first in Philadelphia to adopt Lister's antiseptic techniques; he performed in 1887 what is said to have been the first successful operation for brain tumor in the United States; and in 1893 he assisted Dr. Joseph D. Bryant in removing a cancerous portion of President Grover Cleveland's jawbone. J. Chalmers da Costa, his successor in the chair of surgery at Jefferson, wrote that the worse the surgical situation, the "calmer, quieter, kinder, pleasanter" Keen became. When finally he had the situation in hand and the hemorrhage under control, he would say, "Now we have the whip-hand of it"—an expression which became proverbial at Jefferson.



57. The Dissecting Room by Thomas P. Anshutz (American, 1851–1912)
Monochrome oil sketch, 1879, 10 x 12½. Lent by The Pennsylvania Academy of the Fine Arts

Christian Street Hospital in Moyamensing Hall was opened with one patient on May 6, 1861; John H. Brinton was one of the assistant surgeons. In February 1862 the Army opened three hospitals, including the depot of the Reading Railroad at Broad and Cherry Streets, remodeled for the purpose. Another, at 16th and Filbert Streets, figures in S. Weir Mitchell's novel *In War Time*. Before the war ended more than fifteen hospitals, large and small, had been established in Philadelphia, including the 3500-bed Satterlee General on Baltimore Avenue between

William S. Forbes (1831–1905). Born in Falmouth, Stafford County, Va.; M.D., Jefferson Medical College, 1852; surgeon, British Military Hospital at Scutari, 1855; military surgeon during the Civil War; private lecturer on anatomy; professor of anatomy and clinical surgery, Jefferson Medical College, 1886. He was one of two or three most influential in drafting and securing the passage of the Anatomy Act by the Pennsylvania legislature, 1867, and of its revision, 1883, as a "footnote" in this painting indicates.



58. William Smith Forbes by Thomas Eakins (American, 1844–1916)
Oil, 1905, 82 x 50. Lent by The Jefferson Medical College and Medical Center



59. The Gross Clinic by Thomas Eakins (American, 1844–1916)
Oil, 1875, 96 x 78. Lent by The Jefferson Medical College and Medical Center



60. The Gross Clinic
by Thomas Eakins (American, 1844–1916)
Oil sketch, 1875, 24 x 20
Philadelphia Museum of Art: Given by Mrs. Thomas Eakins and Miss Mary A. Williams



61. Dr. Samuel David Gross and Dr. James H. Barton
by Thomas Eakins (American, 1844–1916)
Pen and wash drawing, 1876, 12 x 15⅛
Philadelphia Museum of Art: Given by Mrs. Thomas Eakins and Miss Mary A. Williams

Dr. Samuel David Gross, in his clinic at Jefferson Medical College, is shown with scalpel in hand talking to his pupils in a pause during an operation. Dr. James H. Barton probes the incision which is being held open with a tenaculum by Dr. Daniel Apple; Dr. Charles S. Briggs holds the patient's leg, and the anesthetist is Dr. W. Joseph Hearn. The patient's mother, seated behind Dr. Gross, hides her eyes, and behind her the clinic clerk, Dr. Franklin West, is writing down the surgeon's remarks. The latter's son, Dr. Samuel W. Gross, stands in the entrance to the amphitheater, and behind him appears "Hughie," the janitor. (Philadelphia Museum of Art, *Thomas Eakins. A Retrospective Exhibition.* 1961.)

Samuel D. Gross (1805–1884). Born near Easton, Pa.; M.D., Jefferson Medical College, 1828; practiced at Easton; demonstrator of anatomy, Medical College of Ohio, 1833; professor of pathological anatomy, Cincinnati Medical College, 1835; professor of surgery, University of Louisville, 1840; professor of surgery, Jefferson Medical College, 1856; author, *A System of Surgery*, 1859, which one of his successors at Jefferson, J. Chalmers Da Costa, pronounced "the greatest surgical treatise of the day, and probably one of the greatest ever written . . . so clear that any man of reasonable intelligence can understand it."

Of this masterpiece of portraiture and painting, which caused a sensation when it was exhibited, one critic wrote: "The public of Philadelphia now have, for the first time, an opportunity to form something like an accurate judgment with regard to the qualities of an artist who in many particulars is very far in advance of any of his American rivals. We know of no artist in this country who can at all compare with Mr. Eakins as a draughtsman, or who has the same thorough mastery of certain essential artistic principles. . . . To say that this figure is a most admirable portrait of the distinguished surgeon would do it scant justice; we know of nothing in the line of portraiture that has ever been attempted in this city, or indeed in this country, that in any way approaches it." But most critics were unfavorable: submitted to the Centennial Exposition in 1876, the painting was rejected by the art jury; and it found a place only among the industrial exhibits devoted to medical instruments and hospital supplies.

44th and 46th Streets, and Mower General in Chestnut Hill, with a capacity of 3,000. Only Washington was a larger hospital center.

One result from these hospitals was an increase of medical knowledge. The hospital at Turner's Lane at 19th Street contained principally patients with wounds and diseases of the nerves and nervous system; at one time 80 epileptics were confined there. S. Weir Mitchell, William W. Keen, and George R. Morehouse were the principal surgeons; under Mitchell's leadership careful observations and studies were made of the physical and psychic effects of wounds to nerves; the staff experimented with massages and drugs; and several important works were published based on this work, notably Mitchell's *Reflex Paralysis* and *Gunshot Wounds and other Injuries of the Nerves*. Three quarters of a century later, in a reprint of *Reflex Paralysis*, John F. Fulton of Yale called these books "great milestones in the history of American neurology and American clinical medicine."

For Mitchell the experience of war made a lasting impression—he reached Gettysburg to tend the wounded a day or two after the battle. After that, and especially after the Turner's Lane Hospital, he could never be merely a fashionable doctor; he became a scientist as well. The memory of the wards affected even Mitchell's fiction, and gave a special depth and a unique character and authority to his novels and to short stories like "The Case of George Dedlow."

Other military surgeons were equally deeply stirred. The butchery he saw in the hospitals convinced William S. Forbes that most surgeons were ignorant of anatomy, and that this ignorance was the direct result of students' having insufficient anatomical material to work with. Accordingly, Forbes devoted much time to getting a satisfactory anatomy law passed. The College of Physicians appointed him, Samuel D. Gross, and D. Hayes Agnew [62] to present their case to the Legislature; and in 1867 they saw the law passed. But more men died of disease than of bullets and wounds. And many of these deaths, like those at the hands of untaught surgeons, need not have happened. Doctors knew little about the most elemental principles of hygiene—how to handle food, where to put the privies, how to check lice and reduce skin disorders—but they learned. And after the war hygiene became a part of the medical curriculum. In the early 1870's the University of Pennsylvania instituted a chair of hygiene and eventually established a laboratory and erected a building to house the department's activities.



62. The Agnew Clinic by Thomas Eakins (American, 1844–1916)
Oil, 1898, 130¼ x 70½. Lent by The University of Pennsylvania

Dr. D. Hayes Agnew, in white surgical costume, is talking to the class about the operation he has just performed, for cancer of the breast, in his clinic at the Medical School of the University of Pennsylvania. His assistant, Dr. J. William White, applies a dressing to the wound. Dr. Joseph Leidy II holds a sponge to wipe the blood, and the anesthetist, Dr. Ellwood R. Kirby, stands at the patient's head. Thomas Eakins (painted by Mrs. Eakins) appears at the extreme right and Dr. Fred H. Milliken is whispering to him. (Philadelphia Museum of Art, *Thomas Eakins. A Retrospective Exhibition*, 1961.)

D. Hayes Agnew (1818–1892). Born in Lancaster County, Pa.; M.D., University of Pennsylvania, 1838; practiced in Chester and Lancaster counties; settled in Philadelphia, 1848; teacher in the Philadelphia School of Anatomy, 1852; surgeon to the Wills Eye Hospital, 1863; to the Pennsylvania Hospital, 1865; to the Orthopedic Hospital, 1867; professor of clinical surgery, University of Pennsylvania, 1870; professor of surgery, 1871; surgical attendant to President Garfield, 1881; president, College of Physicians of Philadelphia, 1889; author, *A Treatise on the Principles and Practice of Surgery*, 1878.

J. William White, who appears in this picture as Agnew's assistant, might have been describing it when he recalled his master's manner: "His habit at his clinic was to precede his operation by a brief statement of the history of the case, and by some remarks upon diagnosis and prognosis, and upon his reasons for choosing the particular operative method he was about to employ. During the operation itself he said but little. Afterwards he would usually leave some of the final details, the arrest of hemorrhage, insertion of sutures, application of dressings, etc., to his assistant, while he explained more fully what he had just done, and described what he had observed."



63. William Thomson by Thomas Eakins (American, 1844–1916)
Oil, 1907, 73½ x 47¼. Lent by The College of Physicians of Philadelphia

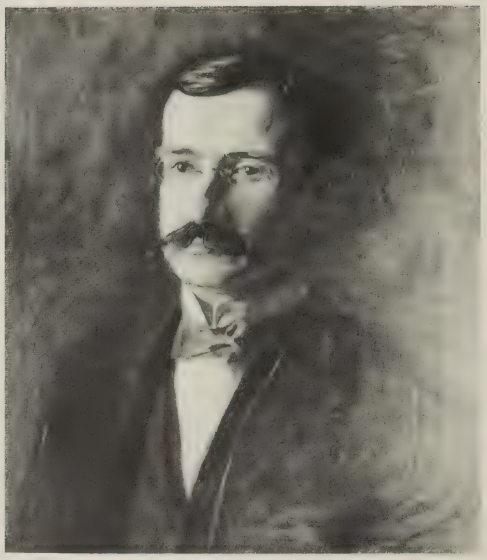
BEFORE THE CIVIL WAR most physicians practiced general medicine. A man might prefer cases of a certain kind and even acquire outstanding skill and reputation in a special field; but few, except possibly some surgeons like Philip Syng Physick, could live by practicing a specialty only. By 1900, however, there were so many patients and so much business that it was possible for a man to specialize, and so much knowledge to master that some specialization was desirable, if not almost necessary. William Thomson [63], for example, found that he could limit his practice to the eye; Matthew H. Cryer [64] made the anatomy of the head his specialty; while Charles Lester Leonard [65] found in X-rays a new specialty to study and teach and a new diagnostic procedure to practice.

The rapid growth of specialization could be measured by the emergence of societies of specific purpose and limited membership. No longer did meetings of the College of Physicians, the Academy of Medicine or the Philadelphia County Medical Society meet the needs of researchers who were pushing into the ever-retreating frontiers of knowledge, or of practitioners eager for information about some puzzling condition in a valued patient. Samuel D. Gross founded the Pathological Society in 1859 and the Philadelphia Academy of Surgery twenty years later. The Obstetrical Society was established in 1868, the Laryngological Society in 1880, the Philadelphia Neurological Society, with S. Weir Mitchell as president, in 1883. Interests of a different kind were represented by the Medico-Legal Society, formed in 1879 to exchange information concerning patients with unpaid bills.

Keeping pace more or less with the increasing population of the city, hospital facilities also expanded. Some, like the German (now Lankenau) Hospital, which opened in 1866, were formed by national groups; others were established by religious societies, which thus gave useful expression to doctrines of charitable conduct and also provided care in surroundings their co-religionists would find familiar and comforting. St. Joseph's Hospital, served by the Roman Catholic Sisters of St. Joseph, was opened in 1849; Episcopal Hospital in 1852, but con-

WILLIAM THOMSON (1833–1907). Born in Chambersburg, Pa.; M.D., Jefferson Medical College, 1853; practiced in Merion, Pa.; military surgeon during the Civil War, in which he used photography to study wounds; lecturer on diseases of the eye, Jefferson Medical College, 1875; professor of ophthalmology, 1895. He knew music, loved all the arts, could sketch and paint, and was a good shot. When he could no longer go hunting and camping, he took to a bicycle and, when that proved too strenuous, to golf. In the judgment of a distinguished successor, George E. de Schweinitz, Thomson was "a chief among those who raised ophthalmology to the high plane which it has always occupied in this city."

Charles Lester Leonard (1861–1913). Born in Easthampton, Mass.; A.B., University of Pennsylvania, 1885; Harvard College, 1886; M.D., University of Pennsylvania, 1892; director of the Roentgen Laboratory, University of Pennsylvania. His first paper on X-rays was read only a few months after Roentgen announced his discovery. Leonard studied the use of X-ray in diagnosis and in therapy. Like some other pioneer radiologists, he died untimely, a martyr to the science he helped to create.



65. Charles Lester Leonard
by Thomas Eakins (American, 1844–1916)
Oil, 1916, 23½ x 19½
Lent by The University of Pennsylvania

structed a larger building in 1862, which was at once used by wounded soldiers of the Civil War; Presbyterian Hospital in 1872; and the Jewish Hospital in 1874. Special medical and surgical needs were met by the Wills Eye Hospital, founded in 1834 by the bequest of a wealthy grocer James Wills; by Preston Retreat, opened as a lying-in hospital in 1866, in a magnificent building (only recently destroyed) designed by Thomas U. Walter; the Orthopedic Hospital, founded in 1867, with which Dr. Mitchell was connected; and the Children's Hospital, founded in 1855, which became an important center for the study and practice of the new science of pediatrics. Although these hospitals were independently controlled, their staffs included men who were teachers in one or another of the medical schools of the city; and so, through personal ties, most of the city's hospitals were linked with the teaching institutions. In addition, of course, the medical

Matthew Henry Cryer (1840–1921). Born in Manchester, England; major, Sixth Ohio Volunteer Cavalry; farmer; D.D.S., Philadelphia Dental College, 1876; M.D., University of Pennsylvania, 1877; professor of oral surgery, University of Pennsylvania, 1898; author, *Studies in the Internal Anatomy of the Face*, 1901. As artist and photographer, he illustrated every aspect of the anatomy of the human head and neck, and used stereoscopic slides in teaching; he invented new instruments for surgery of the head; and made what lies behind the face as familiar to physicians and surgeons as the color, shape, and texture of the skin are to laymen. This portrait was painted in 1903, the year in which Cryer represented the United States at the Fourteenth International Congress of Medicine in Madrid.



64. Matthew H. Cryer by Thomas Eakins (American, 1844–1916)
Oil, 1903, 23 x 19. Lent by S. Leonard Kent, 3rd.



66. Joseph Carson
by George Frederic Bensell (American, 1837–1879)
Oil, 35⅜ x 28½
Lent by Mrs. Joseph Carson

Joseph Carson (1808–1876). Born in Philadelphia; A.B., University of Pennsylvania, 1826; M.D., 1830; professor of materia medica, Philadelphia College of Pharmacy, 1836; professor of materia medica and pharmacy, Medical Institute of Philadelphia, 1844; physician to the Pennsylvania Hospital, 1849; professor of materia medica, University of Pennsylvania, 1850; author, *History of the Medical Department of the University of Pennsylvania*, 1869. A family anecdote illustrates one quality of Carson's mind. A relation was telling how a friend, wishing to borrow a tub from a neighbor, knocked at the latter's house, but, receiving no answer, peered through the window, where she saw the neighbor lying on the floor savagely murdered. The Carson family reacted with appropriate expressions of shock and horror—all but eight-year-old Joseph. "Did she get the tub?" he asked.

schools had their own hospitals, which were integral parts of the educational program.

An important but seldom-remembered movement in the latter part of the century was reform in public health and preventive medicine. Physicians played an important part in this. Since the great yellow fever epidemics of the 1790s Philadelphia had had a Board of Health. It dealt with epidemics of cholera, typhus, and smallpox. It brought steady pressure on city and commonwealth to prohibit insanitary practices and to promote healthful ones. The city adopted a system of garbage collection and disposal in 1872; it forbade keeping pigs in the city in 1893; it confined slaughterhouses to a narrow area of the city; it instituted inspection of milk and of food manufacturers. Public baths were erected. After 1895 all school children were required to be vaccinated against smallpox. The

Benjamin Howard Rand (1827–1883). Born in Philadelphia; M.D., Jefferson Medical College, 1848; professor of chemistry, Franklin Institute, 1850; professor of chemistry, Central High School, Philadelphia, 1859; professor of chemistry, Jefferson Medical College, 1864. Rand was Eakins' first "outside" sitter—that is, outside the painter's family and friends.



67. Benjamin Howard Rand by Thomas Eakins (American, 1844–1916)
Oil, 1874, 60 x 40. Lent by The Jefferson Medical College and Medical Center



68. Jacob Mendez DaCosta by Thomas Eakins (American, 1844–1916)
Oil, 1893, 40 x 32. Lent by The Pennsylvania Hospital

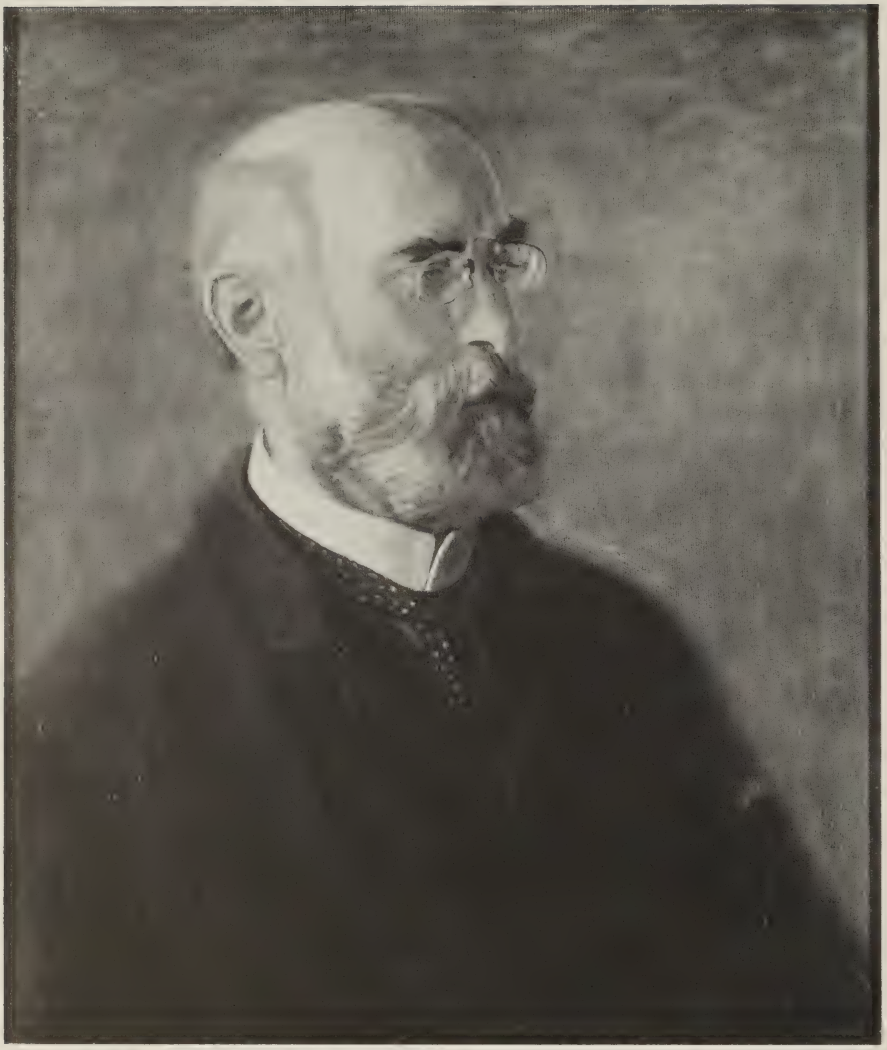


69. Jacob Mendez DaCosta
by Thomas Eakins (American, 1844–1916)
Oil sketch, ca. 1893, 14½ x 10½
Philadelphia Museum of Art: Given by Mrs. Thomas Eakins and Miss Mary A. Williams

repaving of streets, with the substitution of electric trolleys for horse-drawn carriages, also contributed perceptibly to the health of the citizens. None of these reforms was easily achieved. It was to be expected that persons who sold milk from mash-fed cows would resist milk inspection as an unconstitutional invasion of personal rights; but physicians were startled to find that many citizens, in the name of religion or freedom, opposed the efforts of the community to make or keep them well.

As the century wore on and the profession became securely established, it was inevitable that some physicians should take at least an avocational interest in its history. Dr. George W. Norris wrote a history of medicine in early Philadelphia; but it remained unfinished at his death in 1875, and was not published until 1886. Samuel D. Gross edited *Lives of Eminent American Physicians and Surgeons of*

Jacob Mendez DaCosta (1833–1900). Born on St. Thomas, West Indies; educated in Germany; M.D., Jefferson Medical College, 1852; studied in Paris under Trousseau and in Vienna under Rokitansky; physician to the Pennsylvania Hospital, 1865; professor of the practice of medicine, Jefferson Medical College, 1872; president, College of Physicians of Philadelphia, 1884, 1895; author, *Medical Diagnosis*, 1864. Watching his own symptoms during his last and fatal heart attack, he remarked, "Just as I expected."



70. Edward J. Nolan by Thomas Eakins (American, 1844–1916)
Oil, ca. 1900, 24 x 20. Philadelphia Museum of Art: Given by Mrs. Thomas Eakins and Miss Mary A. Williams

the Nineteenth Century, a valuable work but one which its author seemed to remember chiefly because he put $200 of his own money into it. The brief and often perceptive sketches of his teachers and contemporaries which Gross put into his autobiography made that work a useful source for medical history. The centenary of the founding of the Medical Department of the University of Pennsylvania was the occasion for Joseph Carson's [66] writing a history of that institution; and the centenary of the College of Physicians in 1887 was marked by the publication of Dr. W. S. W. Ruschenberger's account. Dr. Thomas G. Morton and Frank Woodbury in 1895 published a stout history of the Pennsylvania Hospital with a wealth of documentary materials on both Philadelphia doctors and practice and, because of the pre-eminence of the hospital and of the Philadelphia profession, on American medicine as well. S. Weir Mitchell and William Osler [74] frequently drew on the history of medicine and biographies of the profession's more colorful figures for occasional addresses and papers; they made medical history a respected and desirable avocational study for the leaders of the profession. At the turn of the century Dr. Francis R. Packard essayed a history of medicine in the United States; the work was enlarged in 1931 and reprinted in 1963, and is still not superseded.

The popularity of the history of medicine doubtless owed something to the realization of many Philadelphia physicians that they and their fathers and grandfathers had made much of that history. That a son should enter his father's profession was not unusual. William Shippen, Sr., Thomas Bond, Sr., Benjamin Rush, John Bard, Richard A. F. Penrose, and Samuel D. Gross were only a few of many doctors whose sons followed them into medicine. But by 1900 Philadelphia could point to several families in which there had been a physician in each of three or more generations. The names of Wood, Meigs, DaCosta [68], and Solis-Cohen come to mind. John H. Gibbons was one of the earliest members of the College of Physicians, elected in 1788; one of his descendants of the same name was president of the College in 1965. Three successive William Peppers taught and practiced medicine in Philadelphia; with assorted brothers, cousins,

Edward J. Nolan (1846–1921). M.D., University of Pennsylvania, 1867; Sc.D., 1916. His medical thesis was on the medicinal plants of Pennsylvania; natural history was his real interest; he made no significant contribution to medicine, but served the Academy of Natural Sciences of Philadelphia as recording secretary, librarian, and editor from 1868 until a few weeks before his death. He was, in the words of one of his successors, "an active participant in every branch and aspect of the Academy, no project being initiated or accomplished without his aid."

and nephews—O. H. Perry Pepper [77] was a brother of the third William—they formed a kind of medical dynasty. Perhaps the Hewsons are the longest uninterrupted succession of doctors—seven generations, from William, surgeon-apothecary in Northumberland, through Thomas Tickell Hewson [41], president of the College of Physicians of Philadelphia, to Dr. James S. Hewson of the present generation.

But for all its strengthening qualities, tradition was often an obstacle to reform and progress. It did not prepare Philadelphia physicians to accept easily some of the changes which the twentieth century brought. Chief among these was the increasing role of the basic medical sciences in the medical school curriculum. The new generation, trained in German universities, asserted that the basic sciences should undergird all medical instruction and practice. In every medical school—and not only in Philadelphia—faculties were slow to accept this idea. This was largely because the teachers were practitioners, not full-time academics. Their concern was with tending and curing the sick, and with teaching young men how to practice—and they were good at their jobs. The establishment of Johns Hopkins University Medical School shook their confidence in the system, but did not destroy it. Hopkins graduates went into the other schools to preach and practice the new gospel. Simon Flexner [72], for example, headed the laboratory of pathology at the University of Pennsylvania. Though he was not the first in Philadelphia to urge the importance of research, he did not find his post congenial, and soon left for the limitless opportunities of the Rockefeller Institute.

The introduction of science into the medical curriculum and into medical practice, the changing patterns of practice from the horse-and-buggy doctor to the specialist in his Medical Arts Building, the steadily widening support for medical care in the twentieth century are stories as fascinating and full of personality and battle as anything the eighteenth and nineteenth centuries can offer.

Joseph Leidy (1823–1891). Born in Philadelphia; M.D., University of Pennsylvania, 1844; prosector in anatomy, University of Pennsylvania, 1845; lecturer, Philadelphia Medical Institute, 1849; professor of anatomy, University of Pennsylvania, 1853; surgeon, Satterlee General Hospital, 1862; professor of natural history, Swarthmore College, 1870; president, Academy of Natural Sciences of Philadelphia, with which he was always closely connected, 1881; president, Wagner Free Institute of Science, 1885; original member, National Academy of Sciences, 1863; author, *An Elementary Treatise on Human Anatomy*, 1861. A tireless worker, he made distinguished contributions to anatomy, vertebrate paleontology, and parasitology, and used to say he was "too busy to theorize or make money." Henry Fairfield Osborn wrote of him: "Among zoologists he was the last to treat of the whole animal world from the protozoa to man, rendering in every branch contributions of permanent value."



71. Joseph Leidy
Plaster death mask, 1891, 11½ high. Lent by The American Philosophical Society



72. Simon Flexner
by Adele Herter (American, 1869–1946)
Pastel, 84 x 58
Lent by The University of Pennsylvania

Simon Flexner (1863–1946). Born at Louisville, Ky.; M.D., University of Louisville, 1889; studied at Johns Hopkins University Medical School; professor of pathological anatomy, Johns Hopkins, 1898; professor of pathology, University of Pennsylvania, 1899; director of laboratories, Rockefeller Institute for Medical Research, 1903; director, Rockefeller Institute, 1920. Passionately devoted to research—his papers on pathology have been likened to "a museum in print, except that they stir with life"—he was also an administrator of the highest order. To Judge Learned Hand he epitomized the man committed to truth and freedom: "open, detached, ready to revise, never insistent to convert, no crusader, or the friend of crusades or crusaders." "It never occurred to him," remarked his friend and associate Peyton Rous, "that there was anything great about him."

J. William White (1850–1916). Born in Philadelphia; M.D. and Ph.D., University of Pennsylvania, 1871; member of the scientific expedition led by Louis Agassiz to the Straits of Magellan, 1871; resident physician, Philadelphia General Hospital, 1873; surgeon, First Troop, Philadelphia City Cavalry, 1878; professor of clinical surgery, University of Pennsylvania, 1887; professor of surgery, 1900; active in civic and University affairs. In his travel diary for 1899 appears the following characteristically other-minded comment on the quiet of an English village: "I am not, and I never shall be, used to farm noises. . . . I never could see any sense in a hen making such a d——d fuss over every egg she lays; and it seems particularly unreasonable that, like the females of all other species, she should select such inconvenient hours for bringing her offspring into the world. This has been one of the complaints of obstetricians ever since I have known any of them."

White's sittings for this portrait began on June 21, 1909, the day after he reached London, unusually tanned after the early summer voyage. Contemplating the picture at the Pennsylvania Academy of the Fine Arts, where it was shown before it was officially presented to the University, Dr. William W. Keen observed to Agnes Repplier, "Don't tell me that the leopard cannot change its spots, for White has certainly changed his skin."



73. J. William White by John Singer Sargent (American, 1856–1925)
Oil, 1909, 38 x 32. Lent by The University of Pennsylvania



74. Sir William Osler by John Singer Sargent (American, 1856–1925)
Charcoal drawing, 1914, 21½ x 15½. Lent by The College of Physicians of Philadelphia

James Tyson (1841–1919). Born in Philadelphia; A.B., Haverford College, 1861; M.D., University of Pennsylvania, 1863; military surgeon during the Civil War; lecturer on microscopy, University of Pennsylvania, 1868; professor of clinical medicine, 1889; professor of medicine, 1899; dean of the Medical Faculty, 1888; president, College of Physicians of Philadelphia, 1907.



75. James Tyson
by Hugh Henry Breckenridge (American, 1870–1937)
Oil, 1912, 75 x 53
Lent by The University of Pennsylvania

This is not the time to recount these episodes, for some of the participants are still living, and at least one of the dead has yet to be heard from: Dr. J. William White [73] wrote an account which will not be opened until fifty years after his death—that is, not until 1966.

In the middle of the twentieth century as in earlier years, it is clear that the pre-eminence of Philadelphia medicine is owing to the happy association of many individuals, institutions, and interests—clinicians who know diseases and sick people and how to treat them; medical schools where Rush, Gross, Osler, and

William Osler (1849–1919). Born at Bond Head, Ontario, Canada; M.D., McGill University, 1872; professor of the institutes of medicine, McGill, 1875; pathologist, Montreal General Hospital, 1876; professor of medicine, University of Pennsylvania, 1884; professor of medicine, Johns Hopkins University, 1889; regius professor of medicine, Oxford University, 1905; author, *Principles and Practice of Medicine*, 1891. Of him his Hopkins colleague William H. Welch wrote: "I doubt whether the history of medicine records a man who had greater influence upon the students that came under his teaching. He inspired them with a remarkable devotion and loyal affection. He was their example. His life embodied his precepts, and his students cherished his words."

Osler referred to this portrait in a letter to J. William White in 1914: "I had a nice morning with John Sargent the other day. He made a splendid crayon sketch of me which will go in a couple of months to the College of Physicians, Philadelphia."



76. The Babcock Surgical Clinic by Furman Joseph Finck (American, 1900–)
Oil, 1944–45, 54 x 67½. Lent by Temple University School of Medicine

Shown besides Dr. Babcock are Dr. William N. Parkinson, emeritus dean and emeritus professor of clinical surgery at Temple, fourth from left, standing, background; Dr. W. Emory Burnett, emeritus professor and emeritus chairman, Department of Surgery, standing, second from left, background; and Dr. George P. Rosemond, present chairman, Department of Surgery, Temple University School of Medicine and Hospital, first left, standing.

W. Wayne Babcock (1872–1963). Born in East Worcester, Otsego County, N. Y.; M.D., College of Physicians and Surgeons, Baltimore, 1893; M.D., University of Pennsylvania, 1895; M.D., Medico-Chirurgical College, 1900; demonstrator and lecturer in pathology and bacteriology, Medico-Chirurgical College, 1896; professor of surgery, Temple University, 1903; founding member, American College of Surgeons; president, American Association of Obstetricians, Gynecologists and Abdominal Surgeons, 1933; author, *Textbook of Surgery*, 1928. When he died a local medical journal wrote of him: "His vivid imagination and solid self-assurance produced some very startling surgical developments such as the use of stainless steel sutures, spinal anesthesia, and early ambulation after major surgical procedure."

Chevalier Jackson have taught; hospitals, linked with the schools for teaching and research, served by thoughtful and experienced practitioners, and supported by a philanthropic laity whose archetype is Samuel Coates [35]. A portrait of medicine in Philadelphia requires other strokes as well. The schools and hospitals of auxiliary sciences and specialties, such as dentistry, pharmacy, and osteopathy deserve a place in the historian's sketch. He should include the medical publishers—45 journals had been issued in Philadelphia before 1896. Nor ought any account of the subject omit the manufacturers of drugs and of surgical instruments, like Jacob H. Gemrig [79], who made for Samuel Gross the magnificent instruments displayed in this show. The long and successful union of all these elements, from research scientist and clinician to artisan and mechanic, in the great enterprise of health and healing is perhaps the most artful thing in the art of Philadelphia medicine.

Whitfield J. Bell, Jr.

Oliver Hazard Perry Pepper (1884–1962). Born in Philadelphia; A.B., M.D., University of Pennsylvania, 1905, 1908; assistant instructor in medicine, University of Pennsylvania, 1911; associate in medicine, 1919; assistant professor of medicine, 1922; professor of clinical medicine, 1928; professor of medicine, 1934; chief of medical service, Base Hospitals 34 and 69, World War I; president, College of Physicians of Philadelphia, 1943. Dr. Jonathan E. Rhoads wrote of Pepper: "Perry's practice of medicine was an intensely satisfying intellectual and spiritual experience for him. On the former plane, he conceived of himself as the perennial detective, sorting out and following up his many clues. . . . On the spiritual level, his obvious affection for his fellow-beings and understanding of their problems endowed him with a compassion that seemed boundless."



77. O. H. Perry Pepper
by John Christen Johansen (American, 1876–)
Oil, 1947, 40 x 33
Lent by The University of Pennsylvania



78. Field Operating Instruments owned by Dr. Benjamin Treadwell
18th c. Lent by the Medical Museum of the Armed Forces Institute of Pathology

79. Surgical Instruments Designed by Samuel D. Gross and Others
made by Jacob H. Gemrig, Philadelphia. Lent by The Jefferson Medical College and Medical Center





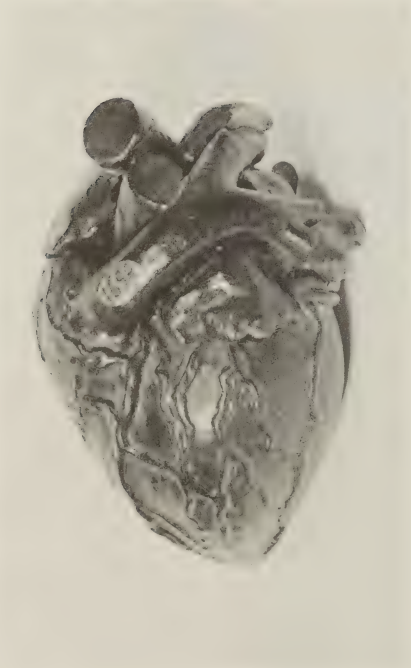
80. Medicine Chest owned by Dr. Benjamin Rush (1746–1813)
Wood, late 18th or early 19th c., 9¼ x 7½ x 6. Lent by Dr. Alexander Rush

This set of medical instruments, presented by Clarence D. Smith to Jefferson, won the first prize gold medal at the 1876 Centennial Exposition in Philadelphia in competition with entries from Germany, England, and France. Some of the instruments were designed by Samuel D. Gross and were used by him at Jefferson Hospital and are illustrated in his book on surgery.



81. Apothecary Jars from the Pharmacy of Christopher Sower, Germantown
Painted wood, 18th c. Lent by The Temple University School of Pharmacy

Wooden apothecary jars were prepared and used by early American pharmacists at a time when porcelain or glass jars were difficult to obtain. The name of Christopher Sower appears on the filter or powder paper in the lid of one of these jars. This is probably the first Christopher Sower (1693–1758), who was known to have concocted herbal medicines. There is evidence that these objects were previously in the collection of Governor Martin G. Brumbaugh of Pennsylvania.



82. Wax Model of a Heart
by Abraham Chovet (American, 1704–1790)
18th c.
Lent by Professor Thomas N. Haviland

Probably one of Chovet's original wax models, this is listed as No. 48 in the Pennsylvania Hospital catalogue of 1806 as being prepared by Chovet: "Heart molded in wax to show the ventricles" [actually to show the coronary circulation]. Purchased by the Pennsylvania Hospital from Chovet's heirs about 1804. Probably made in the West Indies or Philadelphia.



83. Silver Medical Objects
Lent by Dr. J. Donald Wentzler
a. Syringe, self-contained needle, American, 19th c.
b. Case of 2 vaccination points, London, 1814
c. Set of artificial teeth, Philadelphia, 1840
d. Invalide's spout cup, Tiffany, ca. 1870's
e. Pomander, London, Wm. Fawdery, 1715 (*Illustrated*)
f. Infants feeding boat, Thomas & Dan'l. Leader, Sheffield, 1800.
g. Medicine spoon, London, 1828.
h. Nipple shield, London, T. Phipps & E. Robinson, 1808
i. Fleam in ebony case, American, 19th c.



84. Silver Wine Cooler
by unknown silversmith, 1831, 11½ x 8½
Lent by The Pennsylvania Hospital

Presented by Chief Justice John Marshall, as a token of appreciation to Dr. Philip Syng Physick, who performed a lithotomy on him in 1831. Though the patient was 76 years old, he made a complete recovery, due in large part, his physicians thought, "to his extraordinary self-possession, and to the calm and philosophical views which he took of his case." Four years later Marshall again sought Physick's advice in a disease which proved mortal.

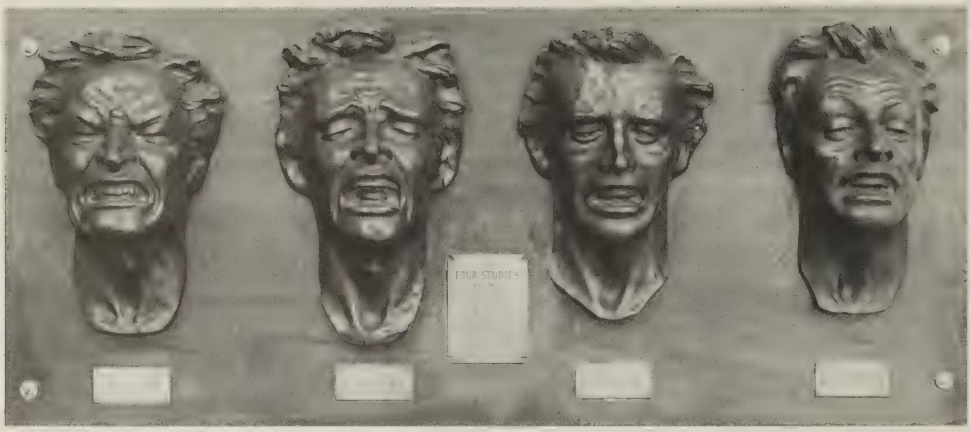


85. Model of Maxilla with Teeth by William Rush (American, 1756–1833)
Painted wood, ca. 1808–1820, about ten times life size. Lent by The Wistar Institute, University of Pennsylvania

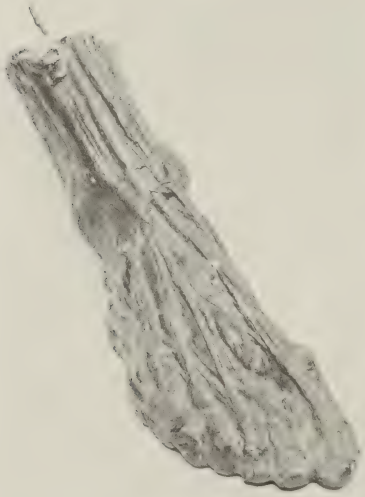


86. Model of Petrous Portion of Temporal Bone With Inner Ear Structures by William Rush (American, 1756–1833)
Painted wood, ca. 1808–1820, about ten times life size. Lent by The Wistar Institute, University of Pennsylvania

William Rush provided anatomical models for both Dr. Caspar Wistar and Dr. Philip Syng Physick. In the Pennsylvania Museum exhibition of William Rush's work in 1937, Henri Marceau quoted Dr. Roy G. Williams' comment on these sculptures: "It is unlikely that precedents existed to guide Rush in the construction of the anatomical models, for they were not in general use before his time. They were to illustrate parts so delicate and complex that it would not have been practical to reproduce them exactly. He had to decide wherein to subdue details without loss of proportions or relations and without making the model diagrammatic. No doubt, with the advice of Dr. Wistar, he had to select an appropriate enlargement and devise methods by which some of them could be dissected. He had to select a durable material and arrange the construction so that they could withstand unusually hard usage. How well he succeeded in doing all this is eloquently demonstrated by the fact that the models are still in excellent condition and in use for the same purpose for which he made them."



87. Heads Representing Physical Exertion by R. Tait McKenzie (American, 1867–1938)
Bronze, 18 x 42. Lent by The College of Physicians of Philadelphia



89. Anatomical Model of Foot and Ankle
by Thomas Eakins (American, 1844–1916)
Plaster tinted in natural colors, 7 x 11, signed "Eakins 1877."
Lent by The Pennsylvania Academy of the Fine Arts

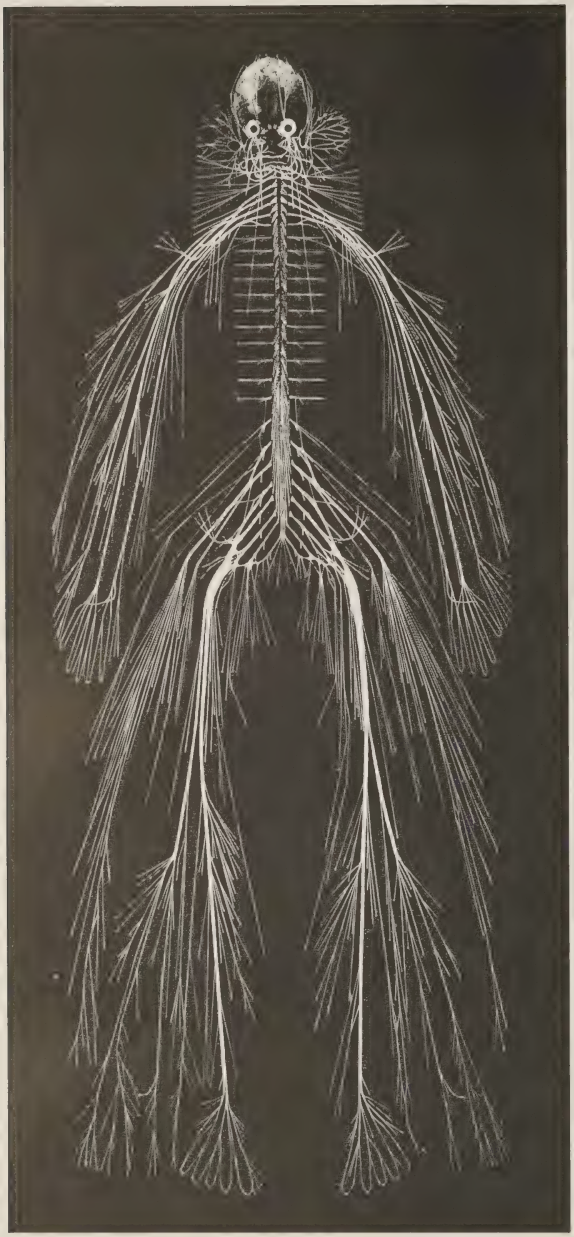
89a. Anatomical Model of Knee Joint *Not illustrated*
by Thomas Eakins (American, 1844–1916)
Plaster tinted in natural colors, 9½ x 8, signed: "T.E."
Lent by The Pennsylvania Academy of the Fine Arts



88. Anatomical Model of Torso, Front by Thomas Eakins (American, 1844–1916)
Plaster tinted in natural colors, 29 x 20, signed in reverse: "Eakins 1880."
Lent by The Pennsylvania Academy of the Fine Arts

88a. Anatomical Model of Torso, Back by Thomas Eakins (American, 1844–1916)
Plaster tinted in natural colors, 30½ x 19, signed in reverse: "Eakins '80".
Lent by The Pennsylvania Academy of the Fine Arts

Not illustrated



90. Dissection of the Cerebro-Spinal Nervous System
dissected and mounted by Rufus B. Weaver, A.M., M.D., 1888; repaired and recased by George D. Geckeler, M.D., 1960, 82 x 35 x 8½
Lent by Hahnemann Medical College and Hospital

Rufus B. Weaver (1841–1936) was Demonstrator of Anatomy and Lecturer on Surgical Anatomy at Hahnemann.



91. George Stuart's Botanical Syrup and Vegetable Pills
by Peter S. Duval (American, died 1886)
Lithograph, 1849, 34 x 24¼
Lent by The Library Company of Philadelphia



92. Dr. Hoofland's Celebrated German Bitters and Balsamic Cordial
by Lewis Napoleon Rosenthal (American, active 1850–1875)
Colored lithograph, 1859, 20⅜ x 15
Lent by The Library Company of Philadelphia

CONVENTIONS OF MEDICAL PORTRAITURE

A relationship between physician and artist might conceivably be traced back in history to that remote age when both had certain priestly functions, the one a guardian against the mysterious terrors of disease, the other as maker of images of gods and godlike men. The physician raised a shield against one manifestation of divine wrath. The artist, the "Ape of Nature," dared that wrath itself by mimicking the primal power of divinity, the creation of life. Both were observed from Olympus, and other centers of orthodoxy, with a patronizing but a jealous eye.

In young America, both professions had still about them some vestigial shreds of ancient mystery, and both were regarded with some suspicion by teachers of the Word and shepherds of the sheep. The painter's craft, long before, had passed from primarily religious uses to that of extolling and maintaining the position of aristocracy, had gone on to attend the rise of new levels of gentility, and in our land of opportunity had become one of the attributes of established family life. Protestant doctrine frequently condemned it as a worldly vanity. Others condoned it, in Dr. Johnson's phrase, as "a natural and reasonable consequence of affection." But basically it stood as one element of social status in a world in which status was still of fundamental importance, and this was a major reason for the rigorously conventionalized portraiture of that early day. Adherence to the formula was as necessary as adherence to accepted usage in dress and manners. The portrait might be a focus for family affection, but it must also inspire reverence and respect. It was a personal monument, as it is today, and in this exhibition, as one looks from the earlier to the later likenesses, one can see both

the continuity of motive and a gradual relaxation of the old inhibitions. The portraiture of status has come a long way from the careful conventionalism of Robert Feke, to a freer use of the conventions by John Neagle, for instance, or from the magic of Gilbert Stuart's simple and brilliant formula to that of John Singer Sargent.

Portraiture in larger sizes and more formal intention called for the use of time-honored symbolism, combined with what Stuart called the "footnotes," to represent personal interests and accomplishments of the subject. Neagle seems to have fancied the classic column particularly for his medical men, and in Dr. William Gibson's portrait reinforces its message with the word "PRINCIPLES," printed large and twice reiterated upon its pedestal. The column may appear anywhere in our early portraiture, but was commonly reserved for clergymen, judges, and posthumous pieces, because of that sense of upright worth and purity which it conveys. The arm resting on a stone pediment carried a similar implication of well-founded character. Dr. Phineas Bond's pose is supported in this fashion, and in his hand is held the gold-headed cane which in William Allen's portrait by Benjamin West marks out the gentleman, but which was, more particularly, an insignia and a supposedly useful one (hollow within and giving off a prophylactic redolence) of the medical practitioner. The human skull which occasionally appears at the physician's hand has an additional interest as a symbol borrowed from religious painting and readapted to a quite different connotation. What had, in a more antiquated art, told of the futility of mortal pleasures and summoned the observer to a contemplation of his afterlife, here represents the study of man's physical self, the most complex and important feature of our anatomy standing for all the rest.

In medical portraiture, the personal attributes, those "footnotes," reveal, from earliest days to the present, the doctor's breadth of view. Books will be seen in this exhibition as outnumbering every other, and the titles wherever they appear show interests ranging into every field of knowledge. These are titles indubitably selected by sitter, not artist. Peale's portrait of Benjamin Rush gives us the fifteen greatest works of science and philosophy as of his thinking in 1783. It is a significant sidelight on this dogged, contentious spirit that in his formal portraits, this and the familiar one by Thomas Sully, he poses himself in attitudes of gentle contemplation. The Sharples pastel shows us here, in the bare, revealing lines of a profile, the true Rush tenacity. Peale's portrait of Dr. Glentworth cites his interest in botany, then a favorite sister science to medicine. Peale, who wrote a sensible little *Essay on Health*, invented a steam bath, and pioneered in the making

of porcelain artificial teeth, had a profound regard for his friends of the profession and his medical portraits are always sympathetic. Something of a sculptor himself, Peale had joined with his close friend, William Rush, in making anatomical models for Dr. Caspar Wistar's use in his lectures, though Peale's work in wax and papier-mâché has not survived to be shown here with the Rush carvings.

John Neagle in his portrait of Dr. William Potts Dewees footnotes most interestingly his subject's art collection. Books are on the table, and on the books inkwell and pen proclaim the writer. He stands with a chair behind him at the base of the column. A chair so represented generally signifies public office, but here it points to his professorship at the University of Pennsylvania. In his portrait of William Gibson, Neagle gives force to the picture by avoiding all personal allusions, though his subject was doctor, painter, botanist, ornithologist. Working with Dr. John Abraham Elkinton, on the other hand, Neagle has had to cope with a sitter who considered his proprietorship of a Philadelphia cemetery as a major achievement and, as if tombstones and the lot layout were not enough, must needs have in hand a formidable volume bearing the title, "LIVINGSTON /ON THE/PENAL CODE." It should be noted in Elkinton's defense that cemeteries had, in the 1830's, an artistic and social function as parks—as public promenades of a somberly respectable but extremely popular character—and that penal reform was one of the great humanitarian causes of that time.

Neagle's father-in-law, Thomas Sully, has painted Dr. Charles Caldwell with a brilliant, concise strength. Caldwell's literary output was tremendous, but here two books alone stand for the broad sweep of his mind, a volume of Buffon, and Joseph Warton's *Essay on Pope*. Warton had made what Caldwell obviously thought an estimable distinction between the poetry of fancy and the poetry of reason. Caldwell, a poet himself on occasion, wrote also in defense of phrenology, a vulnerable science but one which at this time had a strong appeal to portrait painters. Sully, famous for his portraits of dainty and alluring women, did better by his men, and one of the finest of these stands in a category which was then newly emerging into popularity, the picture of the individual in action, stilted symbolism out of the way, candid, the man himself speaking for himself. Thus he shows Samuel Coates, Quaker merchant and philanthropist, President of the Board of Managers of the Pennsylvania Hospital. The fundamental lines of the old formula are there, but the whole impact is direct, immediate and new. Two much later portraits of this same character are Hugh Henry Breckenridge's of Dr. James Tyson, with background of patient and nurse, and Adele Herter's of Dr. Simon Flexner in his laboratory. Both artists had had academic training in

Paris, and these pictures are perhaps related as much to the anecdotal painting of that school as to the American tradition.

More solidly American, and for that matter more solidly traditional and academic too, are the great works of Thomas Eakins, standing supreme in American art. The large number of Eakins' portraits of doctors is a record of friendships and respect, but the relationship is more intrinsic even than that. In him the professions of art and medicine were more closely joined than in any other one man. Returning from the study of art in Paris, he had entered Jefferson Medical College as a student of anatomy. That vigorous, wide-ranging mind so characteristic of the physician, that dedication to intellectual and physical thoroughness, were his also.

Eakins personified the culmination of another link between the professions of medicine and art. Science became for a time almost as important to the second as to the first. The advance of photography in the 1840's and beyond had brought painters suddenly into competition with an accomplishment of which men had dreamed for ages, the capture of the mirror image. To artists, precise representation had always been a point of skill and not of art, yet the new process compelled them to study their own techniques anew. It led them to explore the values of light, and so to the birth of impressionism. Not content with surface effects alone, they gave major emphasis to the understanding of anatomy, an aspect accepted in America long before the other. Eakins, who had mastered photography and made it one of the tools of his trade, took a pre-eminent role in promoting these new standards of artistic comprehension and practice. In his *Gross Clinic* and *Agnew Clinic* surgery is seen with the surgeon's own clear eyes, the advancing science depicted with absolute realism, and yet each scene, within that uncompromising framework, powerfully dramatized.

Eakins was a realist who used freely in his portraits the old convention of personal attributes, the realism and "footnotes" alike subservient to his gift for characterizations that were at once immediate and profound. In his portrait of Professor William Smith Forbes lecturing on anatomy, for instance, he makes conspicuous use once more of that human skull which the artists of the Enlightenment had stolen from the eremite's cave and readapted to their more mundane ideal. In this picture, just to render unmistakable the change, a copy of "THE ANATOMY ACT" lies in a pale glow among the Rembrandtesque shadows around it. A generation later, the hand of the artist-anatomist is seen again in the sculpture of Robert Tait McKenzie, himself a physician, whose sculpture of athletes and, in this exhibition, *Heads Shown in Physical Exertion*, are so close in essential motive to Eakins' work.

Eakins excelled also in a narrower refinement of portraiture well represented here, the portrait in smaller size in which the countenance alone defines character. Here, truly, are the faces of the doctors. Sir Henry Raeburn's *Alexander Monro* is one of these, and another, by a very young painter who never lived to fulfill his promise, is Thomas Spence Duché's *John Morgan*. Duché was a Philadelphian and a pupil of Philadelphia's Benjamin West. When he sent home from London a portrait of his sister he noted that it had "Mr. West's approbation, & he is very particular in those of my pictures that are going to P—a." Dr. Morgan, himself a collector and connoisseur of art, would have been a subject not easy to please.

In general, in this exhibition, the artists are giving their view of the medical profession and in doing so, just as the individual portraitist so often brings something of himself into his characterizations, they offer a sort of composite portrait also of their own vocation over a range of two hundred years. One glimpses Philadelphia, through it all, as an artistic as well as a medical center. The earliest of these artists, Robert Feke, was a Long Islander, but so taken with the city that he named his daughter, Phila, for it. West was a Philadelphian all his life. The Peales, Rush, Sully, Neagle, with others, were all in spirit members of a fraternity united in ideals and in a personal temperament of friendly moderation. Their interests in art were by no means confined to portraiture, and it is fitting that a work of Thomas Doughty, their earliest master of landscape painting, is included here in that part of the exhibition making up the background of the professional portrait.

Medicine is now an indispensable social institution, but in the day of the earliest of these artists the foundations of that security were just being laid. In his introduction to this catalogue, Dr. Bell describes the advance of the physician from apothecary to professional consultant, and the establishment in mid-eighteenth century of an "institutional focus" for the profession in America. The advance of our painters from craft to professional status was contemporaneous, but the establishment of an academy did not come until half a century later. The arts have had no such orderly progress as one sees in the history of science. Their course has been precarious, intuitive, inconsistent, and yet within their own realm of eye and spirit they have been collaborators in the pursuit of truth, and are equally a measure of each generation's success in the search.

Charles Coleman Sellers

ARCHITECTURE AND MEDICINE IN PHILADELPHIA

IN view of the concern for human suffering associated with the tenets of its Quaker founders, it is not surprising that Philadelphia should have played a major role in the establishment of American institutions for the care and treatment of the aged, the sick, and the insane.

EARLY ALMSHOUSES. As early as 1702 a Philadelphia Quaker, John Martin, willed his property on the south side of Walnut Street, east of Fourth, to



93. Friends' Almshouse. South side of Walnut between Third and Fourth streets. Built 1729; demolished 1841. Lithograph, ca. 1841, by Thomas S. Sinclair (ca. 1805–1881). 6¾ x 10⅝. Courtesy of The Free Library of Philadelphia. Not exhibited.

provide a home for elderly indigent Friends. After 1713 this site was used by the Philadelphia Monthly Meeting for the erection of a number of structures, the largest and most important of which was the Friends' Almshouse, built in 1729 facing Walnut Street [93].[1] In this a central passageway led to a rear court or garden surrounded by smaller houses, and the other functions of the building, unusual for the Colonies at this time, must account for an architectural form otherwise without close parallels in Philadelphia. The Friends' Almshouse seems, in turn, to have supplied the incentive that led the Pennsylvania Assembly to establish in 1731–32 a similar, though somewhat larger, public institution on the block bounded by Third, Fourth, Spruce, and Pine streets. Because these early almshouses necessarily provided some forms of simple medical care for the inmates who were sick or insane, they have with some reason been considered among the first hospitals in the American colonies.[2]



94. The House of Employment, Almshouse, Pennsylvania Hospital, and Part of the City of Philadelphia. Engraved by J. Hulett (died 1771); drawn by Nicholas Garrison, Jr. (active 1740–1780). 12⅞ x 26⅝. Lent by The Library Company of Philadelphia.

As the needs of the expanding community gradually outgrew the old almshouse, another was begun about 1760[3] on the outskirts of the settled portion of the city, as part of a complex of buildings that included a residence for the manager and a "house of employment" where the able-bodied poor might be put to work. These are the structures facing Spruce between Tenth and Eleventh streets that form a large "U" at the left in Hulett's engraving of a view of Philadelphia by Nicholas Garrison, Jr. [94]. The symmetrical arrangements of parts—and

[1] Edwin B. Bronner, "Quaker Landmarks in Philadelphia," *Historic Philadelphia*, Vol. 43, Part 1, *Transactions* of the American Philosophical Society, Philadelphia, 1953, p. 216.

[2] Charles Lawrence, *History of the Philadelphia Almshouses and Hospitals*, Philadelphia, 1905.

[3] Joseph Jackson, *Encyclopedia of Philadelphia*, 4 vols., Harrisburg, 1931, Vol. I, p. 60. According to Jackson the building was first occupied in 1767 and remained in use until 1834, when its functions were taken over by the new almshouse in Blockley Township.

especially the projecting pavilion of the central section—connect the design of this group of buildings with other examples of the mid-Georgian (English Renaissance) style that seems to make its first appearance in Philadelphia with Edmund Woolley's tower for the State House (Independence Hall), erected in 1753. The form of these new structures may also owe something to that of the Pennsylvania Hospital, a private institution for the care of the sick and insane, begun a block to the east in 1755.

THE PENNSYLVANIA HOSPITAL. Garrison's view shows only the east portion of the Hospital that was erected first, but we have the tinted engraving after Montgomery and Winter [95] as evidence of how the building was



95. The Pennsylvania Hospital from the Southeast as Originally Designed by Samuel Rhoads. Engraved by John Steeper (active 1755–1762) and Henry Dawkins (died ca. 1786); drawn by Montgomery and Winter; printed and sold by Robert Kennedy. 10 x 14⅛. Lent by The Historical Society of Pennsylvania.

intended to appear when completed. With its hipped roofs, cupolas, symmetrical plan, regular fenestration, and projecting pavilion of the center section, it, too, conforms in style to colonial Georgian practice at mid-century. Though expression of plan can scarcely be considered a characteristic of Renaissance design, in this case the elevation indicates with unusual clarity the principal interior divisions of the Hospital: the cupolas and three-story central sections of the two ends mark the open stairs that gave access to a pair of rooms at either side on each of the two main floors, while long wards connected the end sections to the center



96. Royal Infirmary at Edinburgh. Begun 1738. Engraved by P. Fourdrinier; drawn by P. Sandby. 5⅞ x 11⅞. Courtesy of W. J. Bell, Jr. Not exhibited.

portion in which were to be located the library, apothecary's shop, and parlors.[4] The customary Renaissance practice of placing the basement partly above grade permitted its effective use in this case for the kitchen and pantries as well as for a number of small individual cells for "lunaticks."

The designer of this ambitious project was Samuel Rhoads (1711–1784), a member of both the American Philosophical Society and the Board of Managers of the Hospital. Since he belonged also to the powerful Carpenters' Company, Rhoads was clearly no stranger to problems of architectural design; yet in this, as in nearly everything they did, the Philadelphians who planned the Hospital presumably looked to Britain for their precedent. This they seem to have found principally in the Royal Infirmary at Edinburgh [96], if we may judge from contemporary comment in the minutes of the Hospital and elsewhere.[5] But whereas the plan of the Pennsylvania Hospital resembles an "I", that of the Royal Infirmary is in the form of a "U", and in other respects the differences between the two structures seem almost as striking as do their similarities. Clearly, in its final form Rhoads' design was not simply an adaptation of another, whatever the initial source of his ideas.

William Birch's engraving of the public buildings that included the new Almshouse shows that by the end of the eighteenth century the center structure

[4] Policies 677, 678, 679 (Nov. 30, 1761, and Dec. 30, 1761), The Philadelphia Contributionship for the Insurance of Houses from Loss by Fire, copies of which are in the files of the Philadelphia Historical Commission. In the twentieth century a building on Spruce Street (1929) and one for out-patients were designed in a conforming "Georgian" style by Zantzinger, Borie & Medary. The modern J. Henry Schiedt Building (completed 1963) is the work of Martin, Stewart, Noble & Class.

[5] Benjamin Franklin in his *Account of the Pennsylvania Hospital* makes several general statements that may be interpreted as referring to the Royal Infirmary, and an entry in the minutes of the Hospital for Dec. 21, 1754, notes specifically that Samuel Rhoads brought in the plans of Edinburgh for the Managers to consider. For calling his attention to this entry the author is indebted to Mary K. Epting, who has investigated the origins of the Pennsylvania Hospital as part of her graduate study in the American Civilization Program at the University of Pennsylvania.

of that complex had still not been completed, and from the first it seems also to have been the intention of its founders to erect the Pennsylvania Hospital in three distinct stages. Thus the West Wing was not finished until 1796 and plans for the "Center House," as it was usually known, were not carried out until the early years of the nineteenth century. By that time Georgian taste had entered its final phase and the Renaissance architectural vocabulary of Roman classicism was undergoing refinement in the direction of greater grace and attenuation. Such a general stylistic development is readily discernible in the architecture of other periods, though its specific form in this case is directly attributable to the discoveries of late Roman interior decoration at Pompeii and Herculaneum, especially as reinterpreted in England by the brothers Adam. It is these qualities of the Late Georgian style that are so superbly expressed in the flat pilasters and curved shapes of the Center House [97]. David Evans, Jr., is mentioned in the



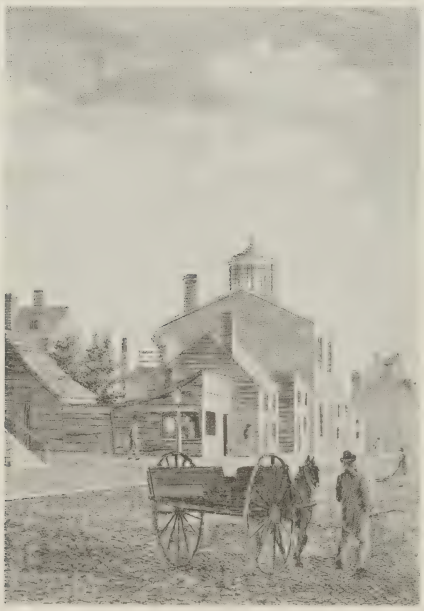
97. Southeast View of the Pennsylvania Hospital as Finally Completed ca. 1805. Block bounded by Eighth, Ninth, Spruce, and Pine streets. Engraved, ca. 1814, by John G. Exilious (active 1810–1814). 10¾ x 18. Courtesy of The Historical Society of Pennsylvania. Not exhibited.

records as the master-carpenter in charge of completing the Hospital, but in this he may have had the advice of John Dorsey (1759–1821), who was added to the Building Committee and Board of Managers in May 1797, and who was later to emerge as an amateur architect responsible for the design of a number of Philadelphia's most interesting buildings, including that of the Pennsylvania Academy of the Fine Arts. Be that as it may, later historians would recognize the

Pennsylvania Hospital as the first structure of its kind erected in the Colonies. In 1816 when Charles Bulfinch was engaged to design the Massachusetts General Hospital in Boston, Philadelphia was one of the places to which he came in search of models.[6]

MEDICAL SCHOOLS AND TEACHING HOSPITALS. The physicians who helped to found the Pennsylvania Hospital had of necessity received their formal training abroad in such centers as London, Paris, and Edinburgh. But before another generation had passed, a medical education might be had in Philadelphia: by 1762 informal lectures on anatomy were being offered at the house of Dr. William Shippen, Jr., and these led three years later to the establishment by the College of Philadelphia (now the University of Pennsylvania) of the first American school of medicine. Facilities for the new school were provided during the first quarter century in the large brick building on the west side of Fourth Street, south of Arch, no longer standing. Originally begun in 1740 as a combined Charity School and "House of Publick Worship," this largest of Philadelphia meetinghouses was acquired in 1749 by Benjamin Franklin and his friends as the site for a new Academy, which six years later (1755) had its charter amended to include provision for a college.[7]

The confiscation of Tory property that followed in the wake of the Revolution provided Dr. Shippen and his associates an opportunity to remodel a build-



[6] Harold C. and James Kirker, *Bulfinch's Boston, 1787–1817*, New York, 1964, p. 228.

[7] In 1779 the College of Philadelphia became the University of the State of Pennsylvania and in 1791 the University of Pennsylvania, the name by which it is known today.

98. Surgeons' Hall. Northeast corner of Fifth and Walnut streets. Remodeled 1792; demolished ca. 1840(?). Drawn and engraved in 1799 by William Birch (1755–1834) and his son Thomas (1779–1851); detail from plate 19 in *The City of Philadelphia, in the State of Pennsylvania North America; as it appeared in the Year 1800*, published by W. Birch, 1800. 8⅛ x 11. Lent by The University of Pennsylvania.



99. The President's House (after 1800 the University of Pennsylvania), erected 1792–97, and the Medical School, erected 1805–1807. Both demolished ca. 1829. West side of Ninth Street south of Market. Wash drawing by William Strickland (1788–1854). 3 x 8¼. Lent by The Historical Society of Pennsylvania.

ing at the northeast corner of Fifth and Walnut streets for use by some of the classes of the Medical School. Known variously as "Anatomical Hall," "Surgeons' Hall," or simply "The Laboratory,"[8] this small structure was included in one of the views of Philadelphia engraved by William Birch in 1799 [98]. A laboratory and dissecting room are said to have occupied the first floor, and presumably the large lantern (cupola), which is the building's most conspicuous architectural feature, provided light for a lecture room located above. But welcome as these new facilities must have been, they were still insufficient to accommodate all the classes of the expanding Medical Department, some of which continued to be held in the old building of the Academy and Charity School on Fourth Street.

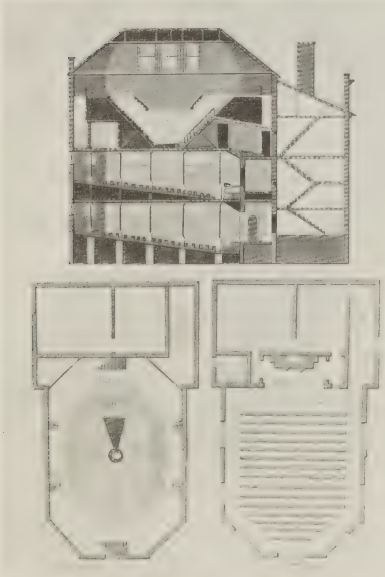
Not until 1807 did the Medical School have an adequate building of its own. Then it was the attractive domed structure [99] designed by the English architect Benjamin Henry Latrobe (1764–1820) to stand on the south side of the great house erected by Pennsylvania for the president of the United States in a vain attempt to induce Congress to make Philadelphia the permanent capital of the country. After President John Adams had declined to live there, this large mansion was acquired at auction in 1800 by the University of Pennsylvania, which remodeled the interior in an effort to accommodate its spacious rooms to the needs of an educational institution. In contrast to the Renaissance elegance of

[8] George W. Corner, *Two Centuries of Medicine: A History of the School of Medicine, University of Pennsylvania*, Philadelphia [1965], pp. 38–39.

the President's House, Latrobe's addition for the Medical School displayed the unadorned surfaces and crisper lines of the later and more severe form of classicism associated in France with Claude-Nicolas Ledoux (1736–1806) and in England with Sir John Soane (1753–1837) or his teacher, the younger George Dance (1741–1825). Presumably the low Roman dome, lit by a lantern, covered some form of operating theater, but since no plans or sections have thus far been found, we can only guess at this and other interior arrangements. Their probable architectural significance is suggested, however, by a letter to Samuel Fox in which Latrobe speaks of taking as his model the "famous anatomical hall in Paris" and further proposes that so large a room might best be heated "by steam pipes of tin."[9]

Some indication of the disposition of the interior of the Medical Department at a later date is offered by the plans and longitudinal section [100] drawn by William Strickland (1788–1854), a young American architect born in neighboring New Jersey. Strickland had been apprenticed to Latrobe, and it was perhaps then, or later while he was working as a painter and engraver, that he made the delightful wash drawing mentioned above [99]. In any case, the plan and section referred to here presumably reflect the "enlargement" of the original addition to the President's House approved by the Trustees at their meeting of April 21, 1817. In view of the fact that the initial appropriation for this was $8,000—a

[9] Talbot Hamlin, *Benjamin Henry Latrobe*, New York, 1955, p. 195.



100. Plans and Longitudinal Section of the Medical Department of the University of Pennsylvania. West side of Ninth Street south of Market. Reconstructed 1817; demolished ca. 1829. William Strickland, architect. Engraved by Kneass, Young & Co.; drawn by William Strickland. From the *American Medical Recorder*, Vol. 1 (1818). 8¾ x 5⅜. Lent by The Historical Society of Pennsylvania.

considerable sum for that day—the contemplated changes must have been fairly substantial. Latrobe's wing was extended one bay to the south; the walls were carried somewhat higher, and the dome with its lantern was eliminated. These alterations help to account for the changed appearance of the University in later views like that engraved from a drawing by Strickland's younger brother, George, and included in C. G. Child's well-known *Views in Philadelphia and its Environs, from original Drawings taken in 1827–30.*

Strickland's professional qualifications apparently impressed the Trustees favorably because in 1829 he was selected as the architect of the two buildings with which they replaced both the old President's House and its later additions [101].[10] At the left of Wild's lithograph is Medical Hall, which an insurance



101. The New Buildings of the University of Pennsylvania: College Hall (right) and Medical Hall (left), West Side of Ninth between Chestnut and Market streets. Built 1829–30; demolished ca. 1874. William Strickland, architect. Lithograph, 1838, by J. C. Wild (ca. 1804–1846) for his *Views of Philadelphia, and its Vicinity*, Philadelphia, 1838. 3¾ x 6⅝. Courtesy of The Free Library of Philadelphia. Not exhibited.

survey made shortly after its completion describes as a structure 85 feet wide and 110 feet deep, having in the rear of the first floor a lecture room, partially floored in brick, and containing 13 circular rows of banked seats in addition to those in the gallery against the back wall. Above this on the second floor was an "Anatomical lecture room" furnished with rows of seats rising around the operating

[10] Agnes Addison Gilchrist, *William Strickland, Architect and Engineer, 1788–1854*, Philadelphia, 1950, p. 80.



102. Medical Department, University of Pennsylvania. 36th Street north of Spruce. 1872–74. Thomas W. Richards, architect. Wood engraving by Van Ingen & Snyder from the *Catalogue of the University of Pennsylvania*, 1874–75. 4 x 7. Not exhibited.



103. Hospital of the University of Pennsylvania as Designed. South side of Spruce between 34th and 36th streets. Center section and right pavilion erected 1872–74; incorporated into the Thomas S. Gates Memorial Pavilion ca. 1940. Wood engraving by Van Ingen & Snyder from the *Catalogue of the University of Pennsylvania*, 1874–75. 3⅝ x 7⅜. Not exhibited.

table and lit by a large skylight. On the front of the first floor was still another lecture room, and above this, on the second floor, was the medical museum.[11]

Strickland's two buildings continued to serve the University until its move to the present site in West Philadelphia in the early 1870's. Designed by Thomas W. Richards (1834–1911), who in 1874 became the University's first professor of architecture and drawing, the buildings on the new campus were composed principally of green serpentine stone and exhibited the combination of French mansard roofs and Gothic wall buttresses and windows that went to make a hybrid style then sometimes known as "Franco-Norman" and today simply as "Victorian." College Hall and the Medical Department (now Logan Hall) have retained much of their original exterior appearance [102] but the University Hospital [103], which was never completed as Richards designed it, has in recent years been entirely covered on the exterior by the Gates Pavilion, erected in the early 1940's.[12] Later physical additions to the medical facilities of the University have included the I. S. Ravdin Institute (1963) and, most important for its architectural design, the Alfred Newton Richards Medical Research Building [104]. Completed in 1961, the latter is a characteristically forceful and original design (the distinctive towers contain fire stairs and ducts to carry off fumes from the laboratories) by Louis I. Kahn that has attracted wide attention, numerous admirers, and not a few imitators.

But if the University of Pennsylvania could claim the first professional school in the country, it was by no means the only institution that lent to Philadelphia its distinction as a center of medical education. By cleverly allying him-

[11] Policy 4712 (Nov. 2, 1829), The Philadelphia Contributionship for the Insurance of Houses from Loss by Fire, a copy of which is in the files of the Philadelphia Historical Commission.

[12] To provide space for laboratory courses and for the newly organized Dental School, the Trustees authorized the construction of a fourth building on the northeast corner of Spruce and 36th streets. Now known as the Hare Building, this was completed in 1878. For a more complete list of the later buildings of the University Hospital see James D. Van Trump, "This Great Hospital: Some Medical School Hospitals in Philadelphia," *Charette*, Oct., 1964, p. 20.



104. Alfred Newton Richards Medical Research Building, University of Pennsylvania. Hamilton Walk. 1959–61. Louis I. Kahn, architect. Drawing by the architect. 11⅞ x 13⅝. Collection the Museum of Modern Art, Gift of the Architect. Not exhibited.

self with the already chartered Jefferson College at Canonsburg, Pennsylvania, Dr. George McClellan contrived in 1825 to establish the Jefferson Medical College as a potent rival to that at the University. No particular architectural importance attaches to the old theater on Locust (Prune) Street that housed the new school during the first years of its existence. In 1828, however, a more suitable building was erected on Tenth Street, to which was added in 1845 a Corinthian portico so monumental [105] as to eclipse completely the restrained appeal of Medical Hall on the nearby campus of the University [101], a fact that can hardly have escaped notice. The designer of this classical grandeur was young Napoleon Le Brun (1821–1901),[13] who later moved his architectural office to New York, though not before he had given Philadelphia such other notable landmarks as the Catholic Cathedral and the Academy of Music. After being inadequately housed for nearly half a century, the teaching hospital of Jefferson Medical College finally moved into spacious quarters situated behind the college



[13] R. A. Smith, *Philadelphia as It Is in 1852*, Philadelphia, 1852, p. 163. Additional details of the complicated architectural history of Jefferson Medical College Hospital are given by James D. Van Trump in the article cited in note 12, above.

105. Jefferson Medical College. Tenth Street north of Walnut. Portico added 1845; demolished ca. 1897. Napoleon Le Brun, architect. Ink and wash drawing by Frank Hamilton Taylor (1846–1927). 12 x 19. Courtesy of Jefferson Medical College. Not exhibited.



106. Hahnemann Medical College (far right) and Hospital (left foreground). Broad Street above Race and 15th Street above Race, respectively. College erected 1884–86; hospital erected 1885–87; college demolished ca. 1925; hospital partly demolished ca. 1936. G. W. and W. D. Hewitt, architects. 3⅛ x 5¼. Courtesy of The Free Library of Philadelphia. Not exhibited.

in a building completed in 1877[14] from the designs of a firm led by Frank Furness (1839–1912), one of the most imaginative and creative American architects of the Victorian period. And though the designers of Jefferson's later buildings were perhaps not quite so pre-eminent in their time as Furness was in his, they were nonetheless men of ability. James H. Windrim (1840–1919), whose career had begun a quarter of a century before with the Masonic Hall on North Broad Street, was the architect of a new building in the neo-Georgian style, completed in 1899. This was replaced, in turn, by the large structure that still stands on the corner of Tenth and Walnut streets, erected about 1928 from the designs of Horace Trumbauer (1868–1938), who is perhaps best known for his association with the projects of the Widener family and as the architect of a number of Philadelphia's major hotels. More recently, new additions have been the work of other prominent Philadelphia architects: the Student Nurses' Residence (1959) is by the George M. Ewing Company; the 230-bed addition to the hospital (Foerderer Pavilion: 1954) is by Vincent G. Kling, whose office is responsible for many of Philadelphia's most successful modern buildings.

With few exceptions, the other medical colleges of Philadelphia are more remarkable for their contributions to the profession than for the merit of their buildings. The Benjamin Franklin Parkway swept away the tasteful Italianate structure at 17th and Cherry streets that Frank Miles Day (1861–1918) designed for the Medico-Chirurgical Hospital, which at about the same time (1916) joined with the University of Pennsylvania to form the Graduate School of Medicine. Nor does much remain of the two handsome late Victorian buildings that the brothers George W. and William D. Hewitt[15] provided for the Hahnemann Medical College and Hospital [106]. That of the college on Broad Street was supplanted in 1926–28 by a new hospital building designed by Horace Trumbauer, who had received his professional training in the office of the Hewitt brothers and who was mentioned above in connection with Jefferson Medical

[14] J. Thomas Scharf and Thompson Westcott, *History of Philadelphia: 1609–1884*, 3 vols., Philadelphia, p. 1678. A plan and elevation of the new hospital was published in *The American Architect and Building News* for Sept. 9, 1876. Furness & Hewitt's building seems to have been demolished about 1923.

[15] George Wattson Hewitt (1841–1916) had been associated with Frank Furness in the design of the Jefferson Medical College Hospital. In 1877 he formed a partnership with his brother William (1848–1924), and together they designed a number of Philadelphia's most important buildings, among them the Bourse and the Bellevue-Stratford Hotel. The Hahnemann Medical College was organized in 1867 as an offshoot of the Homeopathic Medical College of Philadelphia (chartered 1848), with which it was later (1869) merged.

College. Part of the old hospital building (after 1928, the college) on 15th Street was demolished to make way for the Klahr Building (opened in 1938 but never completed), and what remains of it will presumably give place in the near future to a modern structure designed by the Ballinger Company, architects also of the new Nurses' Home (opened 1963) on the corner of 15th and Race streets.

The latest of the major medical schools to be established in Philadelphia was that founded by Temple University in 1901. Here, too, older—and in this case essentially nondescript—buildings have gradually been supplanted by modern structures like the Parkinson Pavilion, the Clinic (both opened in 1956), and the Basic Science Research Building (1964), all designed by the Philadelphia firm of Nolen & Swinburne.

NATURE AS GUIDE AND HEALER. The Georgian (and therefore outmoded) character of Strickland's two buildings on Ninth Street [101] is most easily explained as a desire to emphasize the continuity of the University of Pennsylvania by a stylistic reference to its colonial origins, a consideration to which the historically oriented nineteenth century would hardly have been indifferent. So conservative an approach to architectural design was rare with Strickland; a decade before he had been selected as the architect of the Second Bank of the United States for his then-novel design based upon the eight-column Doric facade of the Parthenon on the Athenian Akropolis, and this more archaeological treatment of classical forms characterizes most of his other buildings. Monumental columnar porticoes in the Classical Revival style of the day were a



107. U. S. Naval Home. Gray's Ferry Road and 24th Street. 1827–33. William Strickland, architect. Oil painting by Thomas Doughty (1793–1856). 23½ x 36¼. Lent by The Museum of Fine Arts, Boston: M. and M. Karolik Collection.

part of his designs for both the United States Naval Home [107][16] on Gray's Ferry Road and the new Almshouse [108] on the west bank of the Schuylkill, though



108. New Almshouse. West bank of the Schuylkill, Blockley Township. 1830–34; now demolished. William Strickland, architect. Lithograph by George Lehman (died 1870). 10¾ x 18⅞. Lent by The Historical Society of Pennsylvania.

modern historians are apt to find of greatest interest the part played by such buildings in the search for more fireproof materials and methods of construction. Availability of land doubtless influenced the decision to build the Almshouse and the Naval Home in relatively unsettled areas on the outskirts of the city, but an additional consideration was probably the virtue attributed by the period to the rural scene stressed, in each case, by the artist of the view included here.

Late in the eighteenth century Philadelphians had discovered a very real disadvantage to city life when a number of severe epidemics raised doubts concerning the purity of water pumped from private wells. To meet this threat, City Councils in 1799 engaged Latrobe to carry out his proposal for a system whereby water might be brought from the Schuylkill to a point midway in the city and

[16] Until the establishment of the Academy at Annapolis in 1845, the U. S. Naval Asylum, as it was first known, served also as a training school for midshipmen. The iron porches of the asylum were intended to afford an abundance of fresh air, while at the same time providing maximum protection against the hazards of fire. Later, disasters like the Chicago Fire of 1871 proved that exposed metal was not the fireproof material Strickland and his contemporaries had supposed. For bringing Doughty's painting of the Naval Home to his attention, the author is indebted to James C. Massey, Supervisory Architect, Historic American Buildings Survey, Eastern Office, National Park Service.



109. Fourth of July in Center Square. Pump House erected 1799–1801, demolished 1827–28; Benjamin Henry Latrobe, architect. "Nymph and Bittern" fountain carved in wood ca. 1809 by William Rush (1756–1833). Oil painting by John Lewis Krimmel (1789–1821). 23 x 29. Lent by The Pennsylvania Academy of the Fine Arts.



110. The Schuylkill River from Fairmount. Waterworks built 1812–22; Frederick Graff, engineer. Lithograph, 1838, printed and published by John T. Bowen (ca. 1801–ca. 1856), Philadelphia. 13½ x 21¾. Lent by The Atwater Kent Museum.

thence distributed by means of steam pumps housed in the attractive Greek Revival structure that appears in the background of Krimmel's painting of Center Square [109]. If Philadelphians were not impressed by the success of Latrobe's scheme, they should have been, for theirs was the first municipal water system on a major scale since antiquity.[17]

But despite its advance over contemporary methods, the waterworks in Center Square was not long adequate for the needs of the growing city. By 1812 City Councils found it necessary to begin the construction of a new and larger system, this time beside the Schuylkill at the base of the hill known since William Penn's time as "Fairmount." When the new installations were finally completed about 1822, the area around them soon took on the character of a public park to which Philadelphians and their guests delighted to come in ever-increasing numbers [110]. From these modest beginnings the pleasure grounds along the Schuylkill were expanded until by mid-century there was need for a comprehensive plan to incorporate the various properties on both sides of the river that had been acquired either by purchase or by the city-county consolidation of 1854. Apparently the plan [111] drawn by Andrew Palles in 1859 was prevented by the Civil War from being carried out in detail, but it must be counted, nonetheless, among the earliest American examples of Romantic landscape design on a large scale. Though later modified in execution, the "natural" character of Palles' plan was carefully fostered and extended, until by the twentieth century Fairmount had grown to be one of the largest municipal parks in the world.[18]



111. Proposed Design of Fairmount Park. 1859. Andrew Palles, civil engineer. Lithograph by Louis Napoleon Rosenthal (active 1850–1875). 28¾ x 20¼. Lent by The Library Company of Philadelphia.

[17] Nelson Manfred Blake, *Water for the Cities*, Syracuse, 1955, pp. 18–43. It was the public nature of the Philadelphia waterworks that made it especially noteworthy.

[18] George B. Tatum, "The Origins of Fairmount Park," *Antiques*, Nov., 1962, pp. 502–507.

Protection of the city's water supply was the reason first advanced for municipal ownership of the estates along the Schuylkill; but those who sought funds for the purchase of Lemon Hill or Sedgeley were probably motivated in part by a number of other considerations, no less important for being unexpressed. Most fundamental of these was the belief, current since the time of Isaac Newton (1642–1727) and John Locke (1632–1704), that civilization had somehow diverted man from his true destiny. That was best which interfered with nature least. God was to be known not so much by divine revelation as by the close observation of the operation of his natural laws. Coupled with this view of the relationship of nature to society was the prevailing concept of disease. In an era when the causes of infection were little understood,[19] it was generally believed by laymen and physicians alike that few were the afflictions of mankind that could not be relieved or prevented by sufficient pure water and fresh air.

Faith in the "water cure" (hydropathy) was one result of this attitude; belief in the positive moral and physical benefits to be derived from life in the country was another. Well before the causes of mental disease had become the subject of systematic investigation, attempts were made to treat insanity by controlling the patient's environment. Concerning the landscaping of the grounds of the new asylums that were being built in such numbers in the 1840's and 50's, A. J. Downing (1815–1852), America's first native-born landscape gardener, observed: "Many a fine intellect, overtaxed and wrecked in the too ardent pursuit of power or wealth [in the city], is fondly courted back to reason, and more quiet joys by the dusky, cool walks of the asylum, where peace and rural beauty do not refuse to dwell."[20]

In the development of new methods for the treatment of the insane, the medical profession in Philadelphia predictably took the lead. One of the first patients received at the Pennsylvania Hospital was an insane woman, and provisions for those suffering from mental illness became an increasing problem throughout the city as the nineteenth century advanced. This class of patient seems to have made up a considerable portion of those occupying the new Almshouse, while at the Pennsylvania Hospital they became so numerous that it was decided to erect special facilities for their care and treatment. Passing up the handsome (and presumably more expensive) designs of such leading Philadelphia architects as Thomas U. Walter [112], William Strickland [113], and John Haviland [114], the Managers selected for their new building that proposed by Isaac Holden (died 1884), an English architect who had come to this country in

[19] Richard Harrison Shryock, *Medicine and Society in America, 1660–1860*, New York, 1960.

[20] *The Horticulturist*, Vol. II (March, 1848), p. 396.



112. Design for an Additional Building for the Pennsylvania Hospital. Unexecuted. 1833. Thomas U. Walter, architect. Competition drawing by the architect. 8 x 32½. Lent by The Pennsylvania Hospital.



113. Design for an Additional Building for the Pennsylvania Hospital. Unexecuted. 1833. William Strickland, architect. Competition drawing by the architect. 7⅝ x 26. Lent by The Pennsylvania Hospital.



114. Design for an Additional Building for the Pennsylvania Hospital. Unexecuted. 1833. John Haviland, architect. Competition drawing by the architect. 6 x 28¾. Lent by The Pennsylvania Hospital.



115. Pennsylvania Hospital for the Insane. North side of Market at 44th Street. Built 1833–41; demolished 1959. Isaac Holden, architect. Engraved by William E. Tucker (1801–1857); drawn by William Mason (active 1808–1844). 4¼ x 7½. Courtesy of The Free Library of Philadelphia. Not exhibited.

1826.[21] Holden's building [115] was begun in 1833 some little distance beyond what were then the boundaries of Philadelphia at a site that must have had many of the rural qualities later recommended by Downing for their beneficial effects on those suffering from insanity.

When Holden returned to England in 1836, the execution of his design was supervised by the youthful Samuel Sloan (1815–1884), who in this way became acquainted with Dr. Thomas S. Kirkbride, then at the beginning of an illustrious career as America's leading authority on the treatment of mental disease. Coincident with the completion of the new hospital Kirkbride was made its superintendent, as well as physician-in-chief; and when still another unit for male patients was required in 1856, Sloan was selected, logically enough, as its designer. To harmonize with the Greek Revival porch and generally classic lines of Holden's earlier building, Sloan employed on the exterior of the new hospital [116] the Italianate forms of the neo-Renaissance style, then at the height of its popularity, but the interior must have conformed as closely as possible to the latest theories of Dr. Kirkbride. In fact, until later challenged by the "cottage plan," the "Kirkbride System" seems to have been widely accepted as the standard for American asylums, with Samuel Sloan as its principal architectural exponent. In his study of Sloan, Harold N. Cooledge, Jr., has summarized Kirkbride's theories as essentially "an attempt to increase both the individual atten-

[21] The original intention seems to have been to erect the new building near the old. Moira Mathieson, Assistant Editor for the Catalog of American Architectural Drawings, published Strickland's design in the *Newsletter* of the Society of Architectural Historians for June, 1965 (Vol. 9, No. 3), but otherwise these competition drawings do not seem to have been noted previously. Included among the other competitors were John Trautwine and Samuel H. Kneass. The photographs used here were supplied by the Historic American Buildings Survey.



116. Department for Males, Pennsylvania Hospital for the Insane. North side of Market at 49th Street. 1856–59. Sloan & Stewart, architects. Engraved by John M. Butler (active 1840–1860). 4 x 7¼. Courtesy of The Free Library of Philadelphia. Not exhibited.

tion given to each patient and the total operational efficiency of the hospital staff. Numerous small concentrations of doctors, nurses, treatment rooms, etc. were scattered throughout the hospital, thus bracketing the isolation wards with members of the staff whose ordinary daily routine of duties forced them to pass and repass the patients' rooms."[22]

If continued use may be taken as one measure of architectural success, then Sloan's and Kirkbride's hospital must have had considerable merit. Supplemented by a variety of later additions (most recently the new Psychiatric Unit designed by Martin, Stewart & Noble), it still serves its original purpose, though Holden's earlier building was demolished in 1959. As for Strickland's Almshouse, its character gradually changed with the passing years. In this century the indigent were provided for at Holmesburg (1914) and the insane at Byberry (1926), leaving only the sick to be cared for at what consequently came to be known as the Philadelphia General Hospital, an institution which, considering its origins in the almshouses of the eighteenth century, may claim as ancient a lineage as any hospital in the country.[23] The last units of Old Blockley, as the Almshouse was familiarly called, were finally demolished in the early 1950's as the final units of the present neo-Georgian hospital building were completed.

[22] Harold N. Cooledge, Jr., *Samuel Sloan (1815–1884), Architect*, unpublished Ph.D. dissertation, University of Pennsylvania, 1963, p. 138.

[23] The act separating the hospital function from that of the almshouse is dated Jan. 1, 1920, though the buildings at Holmesburg had been opened as early as 1914. The name "Philadelphia General Hospital" was adopted officially only in 1902, though it had been in popular use for a number of years. Philip H. Johnson was the architect of the new buildings. John Welsh Croskey, *History of Blockley: A History of the Philadelphia General Hospital from its Inception 1731–1928*, Philadelphia, 1929. See also Robert J. Hunter, "The Origin of the Philadelphia General Hospital," *The Pennsylvania Magazine of History and Biography*, Vol. LVII (1933), pp. 32–57.



117. PHILADELPHIA DISPENSARY. Fifth Street south of Chestnut. Built 1801; demolished 1925. Engraving; source and artist unknown. 17 x 21. Lent by The Historical Society of Pennsylvania.

PRIVATE AND DENOMINATIONAL INSTITUTIONS. Although neither as old nor as famous as the Pennsylvania Hospital, a variety of other private institutions contributed importantly to the medical history of Philadelphia. Some of these are as recent as the Magee Memorial Hospital, built at 1513 Race Street in 1958 (Hatfield, Martin & White, architects); others are as old as the Philadelphia Dispensary, organized in 1786 for the treatment of the indigent sick in their own homes. The former is concerned principally with the development of physical medicine, while the latter is said to have been the first medical center in the city to stress inoculation for smallpox.

After carrying out its function for some years in Strawberry Alley, the Dispensary moved in 1801 to the simple but attractive building in the Late Georgian style (note the fanlight in the pediment and the elongated proportions of the columns beside the door) that stood for over a century on Fifth Street across from Independence Square [117]. Calling it one of the "first professional buildings in the country," Charles E. Peterson has described the Dispensary as being about 33 feet front and 49 feet deep, having a shop, "prescribing room," and living quarters for the apothecary on the ground floor and a managers' room, library, and three bedrooms above.[24]

Far more substantial than the modest building of the Dispensary was that which housed the charitable lying-in hospital provided by the estate of Dr. Jonas Preston, a prominent Philadelphia physician [118]. From the designs submitted in a competition held in 1837 the trustees chose that of Thomas U. Walter (1804–

[24] *Philadelphia Architecture in the Nineteenth Century*, Theo B. White, ed., Philadelphia, 1953, p. 23.

1887),[25] a young man who four years before had also been selected as the architect of Founder's Hall at Girard College, the most impressive Classical Revival building of its day. The proportions of the Preston Retreat are perhaps a little heavy for modern taste, but until its recent demolition, it represented one of the better examples of a style that in the nineteenth century had justified for Philadelphia the title "Athens of America."

Under the heading of private philanthropy, mention should also be made of the institution established by a bequest of James Wills, Jr., a prosperous Philadelphia grocer who died in 1825. The early history of the "Wills Hospital for the Relief of the Indigent Blind and Lame" is associated with a building opened in 1834 on Race near 18th Street and now no longer standing. As in the case of Preston Retreat, this, too, was an early work of Thomas U. Walter. After becoming one of the largest American institutions devoted to ophthalmology, the Wills Hospital moved to the corner of Spring Garden and 16th streets in 1932, exactly a century after its founding. The architect of the new building was John T. Windrim (1866–1934), whose father was mentioned earlier as the designer of one of the buildings for Jefferson Medical College and who is himself best known professionally as architect of the Franklin Institute on Logan Square (1934).

The part played by the Quakers in the medical history of Philadelphia has already been noted; and it was to be expected that the many other ethnic and religious groups active in Philadelphia from the first would also establish hospitals and related institutions. After nearly a century of service in its old building at

[25] Unsuccessful competitors whose designs survive include: Thomas McCully, John D. Jones, Thomas S. Stewart, William Kelly, and Isaac Holden. In 1909 an additional story was added to Walter's building. The photograph reproduced here was supplied by the Historic American Buildings Survey.



118. Front Elevation of the Preston Retreat. 20th and Hamilton streets. Erected 1837; demolished 1963. Thomas U. Walter, architect. Drawing by the architect, July 20, 1837. 8 x 13¾. Lent by The Pennsylvania Hospital.



119. Lankenau Hospital. Lancaster Avenue, Overbrook, Pennsylvania. 1953–59. Vincent G. Kling, architect. Tempera rendering by Robert E. Schwartz. 16 x 42. Courtesy of the architect. Not exhibited.

Girard and Corinthian avenues, the hospital founded in 1860 by German immigrants (officially non-denominational, but with strong Lutheran ties) moved in 1953 to its present location on the former links of the Overbrook Golf Club. Named for one of its first presidents, the Lankenau Hospital and Health Center is today housed in a group of buildings designed by Vincent G. Kling [119], the first of which was selected by the American Institute of Architects to receive its Honor Award in Hospital Architecture for 1954.

All of the wards that the Wilson Brothers provided for the Presbyterian Hospital shortly after its founding in 1871 have been superseded by modern replacements,[26] but considerable portions of the original buildings of the Episcopal Hospital at Front Street and Lehigh Avenue are still in use [120]. When begun in 1860 from the designs of Samuel Sloan, this brownstone structure in the "Norman" style was widely regarded as "the finest general hospital in America."[27] The parallel pavilions were said by the architect to have been patterned on those of the Lariboisière Hospital in Paris, a type of plan designed to reduce the likelihood of cross-infection. Although this design had been recommended by the French Academy of Sciences in 1788 and widely used in Europe throughout the

[26] John T. Windrim was the architect of both the Dispensary (completed 1924) and the building for private patients (completed 1931). The Medical Research Laboratory (completed 1962) is the work of Vincent G. Kling. It is contemplated that during 1965–66 the Presbyterian Hospital will merge with the University of Pennsylvania to form the Presbyterian-University of Pennsylvania Medical Center.

[27] Harold N. Cooledge, Jr., *op. cit.*, p. 150. An excerpt from Cooledge's dissertation was published under the title "Samuel Sloan and the Philadelphia School of Hospital Design 1850–1880" in *Charette*, June, 1964, pp. 6ff. See also *The Hospital of the Protestant Episcopal Church in Philadelphia, Its Origins, Progress, Work and Want*, Philadelphia, 1869. In 1890–91 the Harrison Memorial House for Incurable Patients was erected from designs of Stewart & Page, and in 1933 the Tower Building by Day & Zimmerman replaced the old administration pavilion. The Centennial Building (1956–58) was designed by Vincent G. Kling.



120. The Episcopal Hospital. Lehigh Avenue and Front Street. 1860–1874. Samuel Sloan, architect. Wood engraving by Laudebach & Co.; drawing by Ben Linfoot. 3⅛ x 5⅛. Courtesy of The Free Library of Philadelphia. Not exhibited.

second half of the nineteenth century, it was here attempted in an American hospital for perhaps the first time. Administrative offices, library, and Gothic chapel were located in the central pavilion, while treatment areas and wards were confined to those at either end. Large porches turned the linking passageways into solariums; towers at the corners of the wards housed the plumbing.

Of the three buildings designed by Furness, Evans & Co. for the Jewish Hospital (founded 1865) at York and Tabor roads only that intended as a "Home for Aged and Infirm Israelites" (1889) remains, and this is expected to be demolished in the near future. In 1952, as part of the merger of several institutions, the Jewish Hospital became the Northern Division of the Albert Einstein Medical Center. There the Ionic columns that until 1904 formed the porticoes of William Strickland's United States Mint (1829–33) at Chestnut and Juniper streets still embellish the grounds, though the majority of the buildings were designed by Abraham Levy and erected in the 1950's and 60's.

UNITED STATES ARMY HOSPITALS. To raise funds for the care of those wounded in the Union cause, an ambitious "Sanitary Fair" was held in Philadelphia from the 7th to the 28th of June, 1864. For this Logan Square was almost completely covered with a number of buildings, the largest of which was designed by Strickland Kneass (1821–1884), an engineer remembered principally for his role in the building of the Chestnut Street bridge across the Schuylkill. By all accounts the Fair was a notable success: President and Mrs. Lincoln visited it on the 16th, and at its conclusion more than a million dollars in profits was turned over to the Sanitary Commission.

Fairs of this kind were held in a number of American cities, but Philadelphian's concern for the sick and wounded was no doubt increased by the presence in their city of two of the most important of the more than 150 hospitals erected by the Union armies. Of these the largest was the Mower General Hospital at Chestnut Hill [121]. Opened in January 1863, it was designed by John McArthur, Jr. (1823–1890), best known today as the architect of the Philadelphia City Hall.

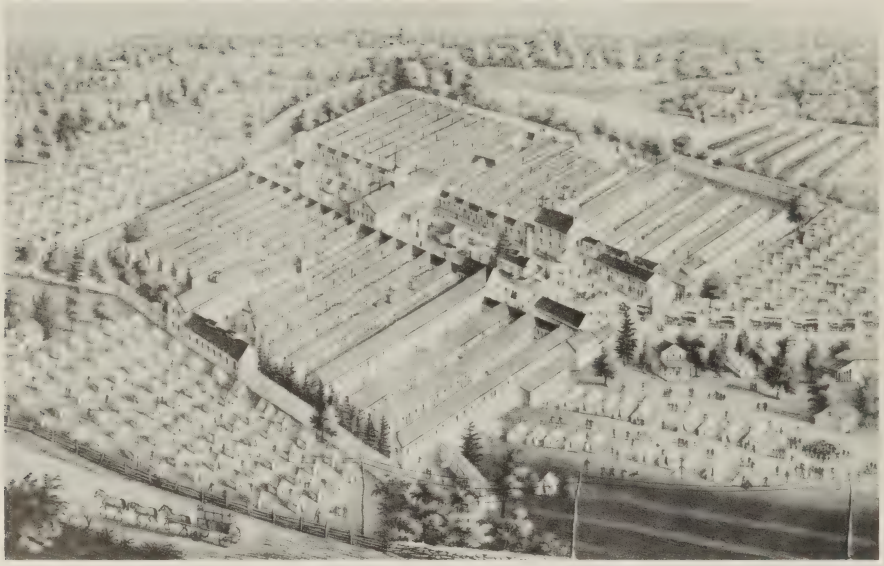
Intended to be erected speedily and at minimum cost, hospitals of this kind were small self-contained cities. Not only were there upwards of 4,000 beds in the 47 wards that radiated from the central court, but the official list of facilities at Mower includes such less-expected items as a Bible-class room, band quarters, a "manufactory for ice cream," and a conservatory.



121. Mower United States Army General Hospital. Reading Railroad between Abington and Springfield avenues, Chestnut Hill. Opened January 17, 1863. John McArthur, Jr., architect. Lithographed in color by P. S. Duval & Son; drawn by James Queen (1820/21–1886). 11¾ x 20½. Lent by The Historical Society of Pennsylvania.

Perhaps it was felt that the size of the Mower General Hospital was ample for one installation, since, like all circular schemes, its design did not readily admit of expansion or addition. In any case, a very different approach was adopted for another army hospital completed a few months earlier in West Philadelphia. Though the tents surrounding it in the lithograph reproduced [122] may suggest that the Satterlee General Hospital had at that time more persons assigned to it than space, there is, nevertheless, nothing inherent in the plan to prevent its being enlarged almost indefinitely. Perhaps, as has been suggested,[28] the British in the Crimea first recognized the merits of a hospital designed around a central corridor through which the wounded might be brought by train or cart directly to wards that could themselves be multiplied to the extent the casualties required. If so, at Satterlee the idea was enlarged upon with Yankee skill and means.

[28] P. J. Stone, "Elements of the Hospital: 1300–1900," *The Architectural Review*, June, 1965, p. 415. Charles E. Peterson called this reference to the writer's attention. The addresses given here for the two army hospitals in Philadelphia are taken from Nicholas B. Wainwright, *Philadelphia in the Romantic Age of Lithography*, Philadelphia, 1958.



122. Satterlee United States Army General Hospital. Pine Street and Baltimore Avenue and 43rd and 46th streets, West Philadelphia. Opened June 9, 1862; closed August 3, 1865. Published by James D. Gay. 11 x 17¼. Lent by The Historical Society of Pennsylvania.

By advertising that he was prepared to send a print anywhere in the United States for 75 cents, the publisher of the Satterlee lithograph doubtless hoped to make customers of the numerous patients and their families. His success in this remains a matter for conjecture, but there can be no doubt that in the process he helped to illuminate a not unimportant chapter in the very full history of medicine in Philadelphia.

George B. Tatum

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